DOCUMENT RESUME

ED 134 686 CE 008 670

AUTHOR	Thomas, Hollie B.; Boyett, Ray H.
TITLE	Baseline Data for Teacher Education. Final Report.
INSTITUTION	Florida State Univ., Tallahassee. Program of Vocational Education.
SPONS AGENCY	Florida State Advisory Council on Vocational and Technical Education, Tallahassee.; Florida State Dept. of Education, Tallahassee.
PUB DATE	Jun 76
NOTE	145p.; Several pages may not reproduce well due to small, faint type
EDRS PRICE	MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS	Educational Research; Educational Trends; *Inservice Teacher Education; Labor Supply; Manpower Needs; Models; *Preservice Education; Staff Improvement; Statewide Planning; Teacher Education; *Teacher Supply and Demand; *Technical Education; *Trend Analysis; *Vocational Education
IDENTIFIERS	Florida

ABSTRACT

The major purposes of this study were to (1) develop baseline data relative to the supply of and demand for vocational and technical education personnel by program area, level, and area of the State; (2) identify the availability of inservice and preservice programs for vocational and technical education personnel, and (3) analyze any discrepancies which may exist between the need for and the availability of programs including any unwarranted duplication of training efforts. Data was collected (through surveys) from public secondary schools; district directors of vocational education; community colleges regarding personnel recruitment policy, hiring policy, sources of personnel; preservice and inservice teacher education programs; and the utilization of teacher education institutions. Results showed that with one important exception, supply and demand for vocational and technical education personnel in Florida are fairly well balanced, and that current productivity of teacher education institutions in Florida is not creating an oversupply of vocational and technical teachers. The health and public service program area proved to be the one serious exception to the general finding of equilibrium between supply and demand forces. The study also indicated that (a) inservice programs are not distributed in proportion to vocational teaching personnel, (b) most inservice activities are of a professional rather than technical nature, (c) most inservice activities were offered for more than one vocational program area, and (d) funding for inservice activities was not equally distributed throughout the State. Questionnaires used in the study are appended. (HD)

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ED134686

Final Report

June 1976

Baseline Data For Teacher Education

The Florida State University

Hollie B. Thomas, Project Director

and

Ray H. Boyett, Project Coordinator

Diane Briscoe, John Wherry, Donald Bell

Research Assistants

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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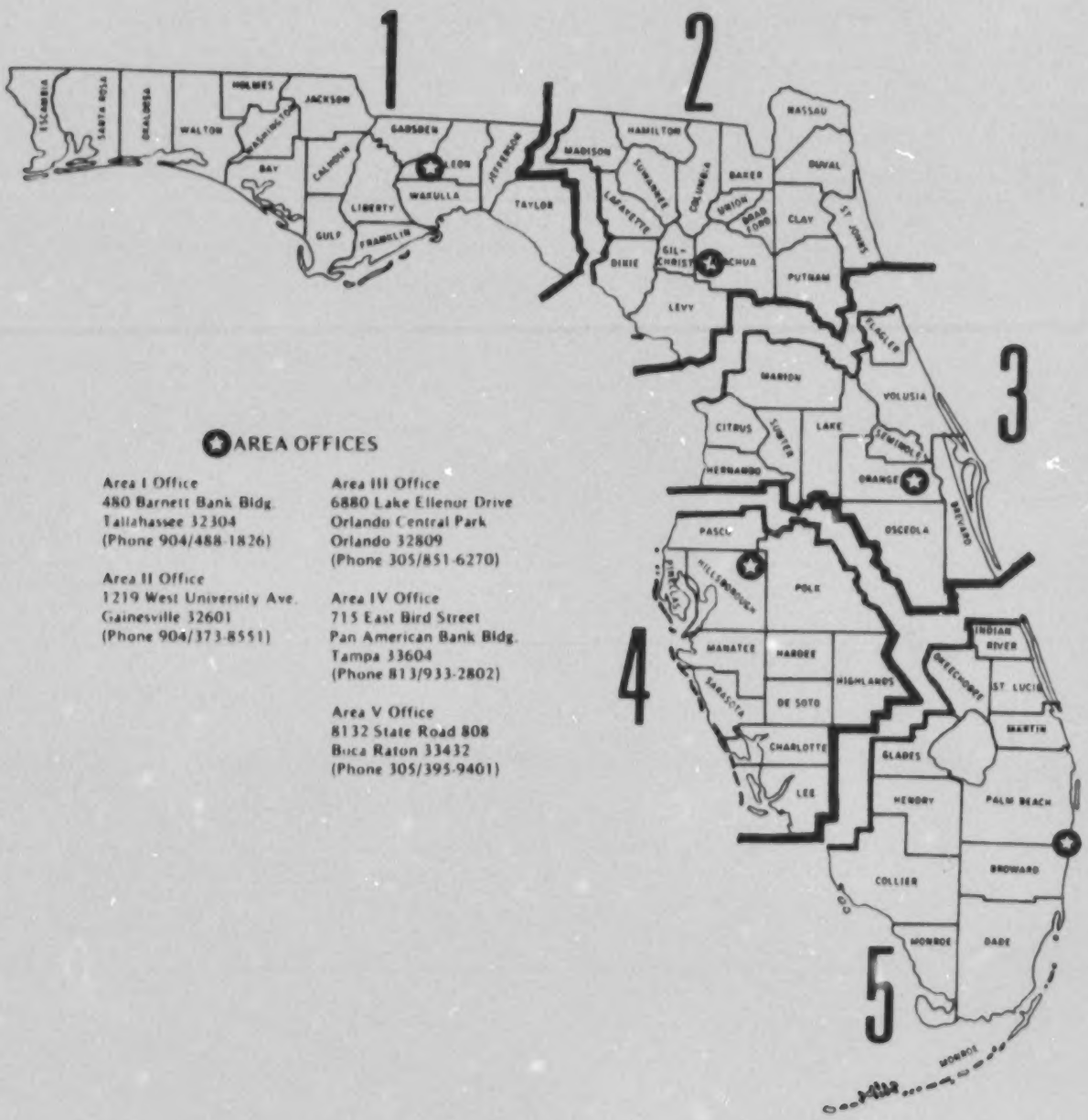
INTRODUCTION

Florida's publicly supported system of vocational and technical education includes instructional programs offered in twenty-four area vocational and technical centers administered by the county school boards, thirteen divisions in community/junior colleges, fifty-two departments of comprehensive high schools, and all sixty-seven local school districts. The total statewide system is divided into five geographic regions (See Map 1).

It is generally accepted that the quality of education in Florida and in America depends primarily upon the quality of the educational staff. Therefore, the critical input required for the maintenance and growth of Florida's system of vocational and technical education is qualified teachers. Without sufficient qualified teachers the system will falter. Given the size of the system and the importance of teachers as input, detailed educational planning and careful educational policy making (with regard to the supply and demand for instructional personnel) are required in order to provide effective and efficient vocational education programs in the future. Conversely, if productivity of teacher education institutions exceeds

Map 1

FIVE GEOGRAHICAL AREAS



AREA OFFICES

Area I Office
480 Barnett Bank Bldg.
Tallahassee 32304
(Phone 904/488-1826)

Area II Office
1219 West University Ave.
Gainesville 32601
(Phone 904/373-8551)

Area III Office
6880 Lake Ellenor Drive
Orlando Central Park
Orlando 32809
(Phone 305/851-6270)

Area IV Office
715 East Bird Street
Pan American Bank Bldg.
Tampa 33604
(Phone 813/933-2802)

Area V Office
8132 State Road 808
Boca Raton 33432
(Phone 305/395-9401)

the indicated need, it may be necessary for those institutions to make updated appraisals and readjust and redirect productivity.

The Florida State Advisory Council on Vocational Education included in its Annual Evaluation Report (1974) the recommendation that:

> "The Division of Vocational Education should update the Master Plan for Vocational Teacher Education and include a system designed to gather information on future supply and demand for vocational personnel by program area, level, and area of the state."

This research study was conducted to provide the Advisory Council with an estimate of future supply and demand of vocational and technical education personnel and to identify and describe the relative size of sources of supply and demand of these personnel. In addition, data needed to make a valid evaluation of preservice and inservice teacher education programs were collected.

Statement of Problem

As previously mentioned, the Annual Evaluation Report (1974) of the Florida State Advisory Council on Vocational Education included the recommendation that the Division of Vocational Education should update the Master Plan for

Vocational Teacher Education. In addition, the recommendation asked that a system be designed to gather information on future supply and demand for vocational personnel by program area, level, and area of state. The Council has indicated that inadequate data are available on which to base recommendations. The Master Plan, which was developed in 1971, does not provide a clear picture of the program areas approved in the various universities, nor does it provide for adequate data concerning output of preservice programs or the availability of inservice programs. The Council has indicated the need for baseline data on supply of and demand for vocational personnel as well as the availability of training programs. These data will provide the Council with the necessary information to make recommendations concerning the nature of data that should be collected on a regular basis by the Management Information System (MIS) of the Division of Vocational Education.

Need and Purpose

In order to comply with the mandate (P.L. 90-576, Part A, Section 104 (5)) given to the State Advisory Council to advise the state board on the development of and policy matters arising in the administration of the State Plan, including the preparation of long-range and annual plans, the Council must have at its disposal adequate data on which to base such advice. In addition, the mandate calls for State Plans to provide policies and procedures to improve

the qualifications of teachers, teacher-trainees, supervisors, directors, and other personnel having responsibilities for vocational education in the state; and to insure that such qualifications continue to reflect a direct relationship with the need for personnel in vocational education programs carried out under the State Plan (P.L. 90-576, Part B, Section 123(7)). As noted earlier, the Master Plan now being used by the Division of Vocational Education provides the Council with an inadequate basis upon which a valid evaluation of preservice and inservice programs can be made. The research data in this report were gathered to provide the Council with more updated information upon which recommendations could be made.

The purpose of this study is to provide the Council with the baseline data needed to make a valid evaluation of preservice and inservice teacher education programs. Data needed by the Council include the supply of and demand for vocational personnel by program area, level, and area of the state. Data concerning the availability of teacher education training programs at both the preservice and inservice levels are given. Thus the purpose of the study may be stated as:

(1) To develop baseline data relative to the supply and demand for vocational and technical education personnel by program area, level, and area of the state.

(2) To identify the availability of inservice and preservice programs for vocational and technical education personnel with emphasis on:

(a) Location of vocational and technical programs;

(b) Number and types of vocational and technical programs; and

(c) Training personnel who conduct inservice and preservice programs.

(3) To analyze any discrepancies which may exist between the need for and the availability of programs including any unwarranted duplication of training efforts.

Specific Objectives

In order to accomplish the purpose of the study, the following specific objectives were established.

(1) To determine the supply of vocational and technical education personnel at the local level by program area, level, and area of the state. Program areas included:

(a) Agri-Business and Natural Resources

(b) Business and Office Education

(c) Distributive Education

(d) Health and Public Service Education

(e) Home Economics Education

(f) Industrial Education

(g) Diversified Education

Levels of education included elementary (where applicable), secondary, and post-secondary. In addition, the position levels of teacher, supervisor, and director were employed to categorize the data. Data regarding supply by levels and programs were summarized by county and the five Department of Education geographic regions.

(2) To determine the supply of vocational education personnel as measured by the productivity of pre-service programs in the nine state universities. These data were summarized by program area, level, and area of the state.

(3) To determine the demand for vocational education personnel by program area, level, and geographic region of the state.

(4) To determine the capacity (given the current resources) of the preservice programs by level and program area in the nine universities in the state system.

(5) To determine the discrepancies between the capacity and productivity of preservice programs for vocational and technical education.

(6) To compare the location of preservice programs for vocational and technical education personnel with the scatter of vocational and technical programs by program area and level.

(7) To determine qualifications of the training personnel in preservice programs by program area, level, and geographic region of the state.

(8) To determine the availability of inservice education delivered by the local education agencies and universities for vocational and technical education personnel in the various program areas, levels, and geographic areas of the state. Inservice programs were identified as to the nature of the inservice activity (technical, professional, etc.), location, types of vocational and technical education personnel served, and training personnel who conducted the inservice activity.

(9) To analyze the supply and demand of vocational technical education personnel by program area, level, and geographic region to determine discrepancies. Discrepancies which involved an oversupply as well as undersupply of personnel were reported. Where an oversupply existed,

duplication of training efforts were identified.

(10) To analyze the discrepancies between the location of inservice training programs and the location of vocational and technical personnel by program area and level.

(11) To identify areas of growth in program areas by levels and geographic regions that could affect the future needs of inservice and preservice teacher education activities. Data regarding population trends (including age) and industrial development were considered.

(12) To determine the extent to which inservice activities were being conducted by vocational educators in universities both within and outside of the service regions designated by the Board of Regents. The types of vocational technical programs and training personnel conducting the inservice programs were also identified.

(13) To identify types of data that should be included in the Florida Management Information System (MIS) to facilitate annual and long-range planning for teacher education in vocational and technical education.

(14) To make specific recommendations regarding the discrepancies found including recommendations that related to the location and number of preservice programs by program areas. Projected demands for teachers and the changing demand for labor in the geographic regions were considered in making these recommendations.

RELATED LITERATURE

A continuing problem for vocational educators responsible for planning for teacher education is the availability of data regarding the supply and demand of teachers and the preservice and inservice education provided for teachers. Faced with the charge of developing a master plan for the preparation of personnel in occupational education, a vocational education study committee (Harris, 1973) in Illinois found that they lacked the necessary information to complete their task. They found it necessary to collect data from public secondary schools, community colleges, and area vocational centers regarding personnel recruitment policy, hiring policy, sources of personnel preservice and inservice teacher education programs, and the utilization of teacher education institutions. The procedures and instrumentation employed by the committee as well as the findings have proven to be extremely valuable to this study.

At the national level, Swanson (1974) reported that the available data on the preparation of teachers were even more fragmentary than the data on vocational education training. The latter was considered to be inadequate. Swanson noted that it was impossible to determine demand for vocational personnel from available data; only rough estimates of trends in demand could be made. Data regarding the supply of vocational teachers were reported to be as sketchy as data on demand.

Evans (1973) noted that there is an absence of responsiveness to the changing supply and demand for vocational teachers. He charged that priorities as reflected by the number of teacher educators were more closely related to the number of teachers needed two generations ago than to the needs of the present or immediate future. To alleviate this situation, Evans indicated a need for a policy formulating administrative group, charged with the responsibility for determining the quality and quantity of vocational teachers needed in a state and which has the authority to resolve conflicts of interest among vocational teacher education institutions.

Ferns (1971) stated that a comprehensive inventory of Michigan's vocational and technical education personnel was not available, although such an inventory listing would be highly desirable for sound planning. In his presentation, Ferns contended that basic to identifying occupational education personnel problems for the 1970's was an

investigation of the characteristics of current stocks, sources, existing training systems, and probable productivity of programs.

In a report released by the Department of Health, Education and Welfare (United States Office of Education, 1972) it was concluded that the supply of persons who traditionally seek teaching jobs is likely to exceed the demand in the early 1970's. However, a note of caution was given that the imbalance should not be misinterpreted. Much of the imbalance was due to projecting past patterns of employment which were established during a period of brisk demand during the 1950's and 1960's. The National Education Association (1970) reported that forty-nine states were able to supply data regarding the general condition of public-school teacher supply and demand. In this study, thirty-five states indicated a shortage of applicants in some subject areas and an excess in others. Only four states reported a substantial excess of applicants in all areas.

Copa and Korpi (1974) used the Delphi technique to obtain estimates of demand for vocationally reimbursed teaching positions in Minnesota. Their study showed a need for approximately 370 new teachers each year in vocationally reimbursed positions in that state over the next five years. However, they stressed the need to assess the particular kinds of assistance and further education desired and needed by those already employed as vocational education teachers.

In regard to inservice education, Ward (1972) concluded from a review of the literature that a statewide system of planning and evaluation should be developed for inservice teacher education in vocational education. A statewide needs assessment model for determining inservice needs of teachers of a single program area was developed and implemented by McCracken (1974). This model, however, was based on university courses taken and thus has limited generalization for multiple program areas and universities.

A survey of other state programs was made by Knoll (1968) to provide baseline data for an assessment of Utah's vocational and technical educational inservice training program. Two specific objectives were (1) to determine the effectiveness of Utah's inservice training program and (2) to identify problem areas and make recommendations for improvement. Knoll concluded that a systematic method of scheduling was needed to coordinate the inservice programs.

Models of Supply and Demand

I. Supply Model

Supply of vocational and technical education personnel may be defined as the total number of persons eligible to fill positions as they exist, or as they are made available. Supply, in this definition, includes those persons already employed as teachers as well as those who are seeking employment.

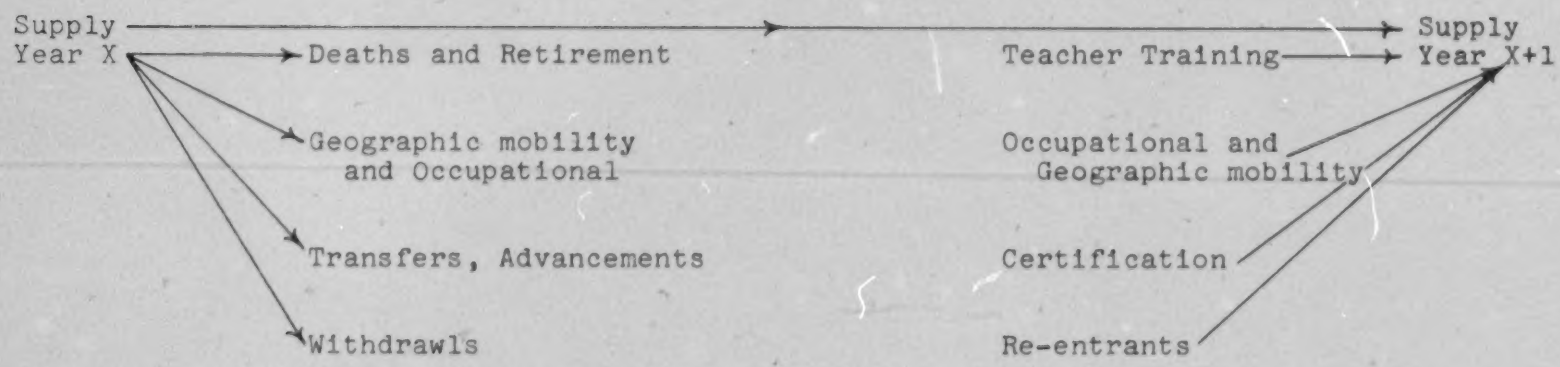
Vocational and technical education personnel are produced by several delivery systems (e.g., preservice programs, industry, out-of-state preservice programs, return to teaching after a period of absence, military, etc.). Thus it was considered desirable to obtain measures of supply from the universities in Florida having preservice programs in the various program areas, as well as at the local school level (i.e., the number and source of qualified applicants applying for vacancies). Funding guides from each university provided an indication of productivity of preservice programs; however, it has been necessary to survey the private institutions for preservice information. According to Certification personnel, State Department of Education, only one private institution offers vocational education courses which are approved for vocational certification (Ola Joyce, Private Communication, 1976).

Goldstein and Swerdloff (1967) developed a formulative method for estimating the supply of national manpower. A very similar model was used by Corpa and Korpi (1974) in estimating the supply of vocationally reimbursed teaching positions in Minnesota. The formulative method of Goldstein and Swerdloff was used in a modified form to estimate the theoretical maximum and minimum supply of vocational and technical educational personnel within program areas and geographic regions. Pictorially, the supply model is shown in Figure 1, where supply for Year X plus inflow factors

FIGURE 1

MODEL FOR ESTIMATION OF SUPPLY

Supply Year X	+	Inflow Factors	-	Outflow Factors	=	Supply Year X+1
Employed Personnel		Teacher Training		Deaths		
Unemployed Personnel		Entrants from other occupations		Retirement		
		Geographic mobility into Florida		Geographic mobility out of Florida		



minus outflow factors equals supply for Year X + 1.

The supply model indicates that as supply is being decreased by outflow factors, another group of factors (inflow) are working to increase the supply from one time period to another. The supply of vocational and technical personnel is that which gives the supply by geographic region rather then by county level. An additional factor precluding an estimate of supply at the local district level is the mobility of personnel within and among geographic regions.

Therefore, it is assumed that the percentage of vocational education instructors by regions is a reliable index of the percentage of the total state supply of vocational and technical personnel by region. While it may be argued that some inaccuracies are inherent in presenting supply by geographic region, such inaccuracies are considered to be minimal when compared to those involved when presenting supply data by county.

In reality, the ideal theoretical model projects an oversupply of vocational personnel since individuals included in the supply may opt to accept non-teaching positions. Thus, an estimate of supply of vocational personnel was also obtained from the information supplied by the local districts.

II. Demand Model

An in-depth review of the literature does not reveal any published modeling for specific demands (U.S. Department of Labor, 1967). Each article reviewed complained of the dilemma involved when attempting to quantify demand. It was concluded that prospective demand for vocational and technical education personnel within Florida does not lend itself to quantification. Public pressures, financial constraints, manpower trends, school population and industrial growth all contribute to the demand for vocational and technical education personnel (Ferns, 1971).

These particular contributions to the demand picture are not all inclusive. There are obviously many other potential contributors which affect the demand at any given time period and for any time span. As a result, there are no specific boundary values which can be applied to the demand model.

Employer needs within vocational and technical fields should ideally control the demand for teaching personnel. At the time of the study, however, demand for teaching personnel was controlled primarily by student enrollment. Because of this inconsistency, demand in some areas outstripped the "actual" need.

Estimation of Demand was examined using two distinct indices:

(1) Projection of student enrollment across vocational and technical fields and

(2) Projected growth of occupational employment across vocational and technical fields.

While demand estimates do not lend themselves to quantification, the demand for vocational and technical education personnel can best be determined by the number of positions filled during the past year, and by determining the number of turnovers and additions anticipated for the next year.

For the past several years, Florida has been funding all educational areas according to Full Time Equivalency (FTE) enrollments, which is the key element in Florida Education Finance Program (FEFP) funding. This is because reported and projected total unduplicated enrollment in specific programs may in fact be partially duplicated due to errors in reporting. Demand estimations will be given based on actual district FTE enrollments and projected occupational growth of vocational fields.

PROCEDURES

The objectives of this project required that data be collected from many sources, including the state universities, private colleges, local school districts, community colleges, the State Department of Commerce and the Division of Vocational Education. The procedures for

data collection varied depending upon the type required and the sources supplying the data. Faced with the same limitations as those expressed by the Harris Committee (1973) the research group found it necessary to collect data from public secondary schools, district directors of vocational education, and community colleges regarding personnel recruitment policy, hiring policy, sources of personnel, preservice and inservice teacher education programs, and the utilization of teacher education institutions. Data collected at the university level sought to assess the supply of and demand for preservice programs along with the degree of productivity at that level.

In order to accomplish the data collection objectives which have been previously stated and to insure that the data collected did not duplicate already existing information, it was necessary to utilize the data available from the Florida Division of Vocational Education, Department of Commerce, etc., before designing the final survey instruments.

Instrumentation

The instrumentation was designed to collect necessary data. In addition, existing data sources were utilized to insure that the data sought via the questionnaire did not duplicate existing information.

Upon completion of the first draft of the survey instrument, a meeting with the Advisory Council staff was

scheduled to review the draft. When the revised instrument was completed, pilot tests were conducted in the appropriate institutional settings. Two local districts (Leon and Wakulla Counties) were selected to pilot test the Local District Questionnaires (Appendix 1). The University Teacher Education Questionnaire (Appendix 2) was pilot tested in the Home Economics Education program at Florida State University. Changes that resulted from pilot testing were mostly of a lexical nature; alterations were also made in the instrument format.

Data Sources and Collection Procedures

The data sources and procedures proposed at the outset of the project are given in Table 1. In addition, the specific data collection procedures which were used are illustrated. Changes from the proposed data sources include the addition of the supply data from the Department of Education, Bureau of Certification, and the local school districts. Also, the substitution of Department of Commerce data for that which was proposed from the Occupational Information and Delivery System (OIDS) was made. Population trend data were collected from the Florida Population Guide of the Department of Commerce.

The Bureau of Certification of the State Department of Education (DOE) provided information regarding the number of persons in the state who are certified to teach Vocational and Technical Education.

Table 1

SUMMARY OF DATA SOURCES AND COLLECTION PROCEDURES

Data	Sources	Proposed Data Collection Procedures	Data Collection Procedures
1. Supply of Vocational and Technical Education Personnel	a. University teacher education personnel	a. Telephone interview schedule or questionnaire	a. Mailed questionnaire with telephone follow-up.
2. Demand for Vocational and Technical Education Personnel	a. Local school districts b. University teacher education personnel	a. Telephone interview schedule or questionnaire	a. Mailed questionnaire with telephone follow-up.
3. Preservice Programs	a. Division of Vocational Education b. Master Plan for Vocational Teacher Education c. University teacher education personnel	a. Existing data sources b. Telephone or personal interview	a. Existing data sources b. Mailed questionnaire with telephone follow-up.
4. Inservice Programs	a. University teacher education personnel b. Local school districts c. PAEC d. Teacher Centers e. Local school district master plans	a. Existing data sources b. Telephone interview or questionnaire	a. Existing data sources b. Mailed questionnaire with telephone follow-up
5. Trend Data	a. Dept. of Commerce b. Occupational Information & Delivery System (OIDS)*	a. Existing data sources	a. Existing data sources

* Dept. of Commerce data were used.

The MIS (Division of Vocational Education) was extremely helpful in obtaining and providing information regarding present and past enrollments in vocational and technical education program areas, as well as present and past employment by program area and level. Information on district inservice training programs was obtained through the efforts of the Division of Public Schools (DOE) which is responsible for maintaining the current District Comprehensive Plans.

The finalized survey instruments were mailed to the district directors of vocational and technical education programs and vocational and technical division chairpersons of the community colleges. A total of 105 instruments were mailed to local district directors and community colleges. The nine state universities required a total of 28 instruments and one private teacher education institution was surveyed by phone.

During all phases of the research the Advisory Council staff members were advised of the most current events associated with the project. Council staff members were extremely helpful in recommending certain specific data sources and expediting the accumulation of such data to insure that the project did not overrun the final target date.

The timetable of major events (proposed and actual) is presented in Table 2. It may be noticed that the actual timetable did not deviate greatly from the proposed.

Table 2

TIMETABLE

Activity	(1975) Month (1976)						
	Nov	Dec	Jan	Feb	March	April	May	June
1. Identify Project Staff	----	————						
2. Develop Instrumentation		-----	———					
3. Identify Data Sources		----	———					
4. Develop Data Collection Procedure			----------	———				
5. Consult with Council Staff regarding Instrumentation and Data Collection Procedures				---------	———			
6. Collect Existing Data			------	———				
7. Collect Pilot Data to Test Instrumentation and Procedures				---	———			
8. Confer with Council Staff regarding Data Obtained					---	———		
9. Make necessary Changes in Instrumentation and Procedures					---	———		
10. Collect Data					----------	————		
11. Develop Format for Summarizing Data					----	———		
12. Confer with Council Staff regarding Format and Data Analysis and Revise Format if needed						---	———	
13. Summarize Data						----------	————	
14. Complete Final Report						----------	————	

——— Actual ---------- Proposed

Follow-Up

The initial response to the survey instrument by the local school district vocational directors and community colleges approached 70%. Follow-up was accomplished by placing phone calls to those persons who had not responded by the April 1st deadline and inquiring whether they desired additional assistance from members of the project staff in order to complete the questionnaire. Some persons seemed reluctant to respond to questions when the information necessary to complete the questionnaire was not available. However, once these persons were given some indication of the way in which the information would be used, i.e., to ascertain trends, along with some insight into the method which would be used to factor out error, the objections vanished. Many directors, after being informed of the nature of the study as well as the impact the study could have on recommendations for future supply and demand of vocational and technical education personnel in their geographic regions and program areas, requested an additional copy of the survey instrument. Other directors stated that their response was already in the mail. One director stated that his county had adopted a policy of refusing to respond to any questionnaire, regardless of the nature of the project.

Follow-up for the university questionnaire was accomlished using essentially the same techniques used for the

local school districts.

Even though May 1st was given as the deadline for survey response, information returned after that deadline was included in the results.

RESULTS

After two follow-up procedures had been accomplished (phone and additional mailing) the local district questionnaires yielded an 89% return. The teacher education institution questionnaires yielded an initial response rate of approximately 50%. Final results netted and 86% return. Given the generally accepted 70% return response for survey instruments, such percentages were considered excellent. The research group concluded, therefore, that both the local district and university returns were quite acceptable and should be representative of the total population of those persons who were surveyed.

A number of returns indicated that no data were available on specific questions or specific questions were left unanswered. In some instances qualitative rather than quantitative answers were given, leaving the researchers the precarious task of quantitative interpretation. Whether each question on the surveys was interpreted and answered in exactly the same manner by all respondents is questionable. Several questions were relatively complex and required more than a casual inspection in order to respond with any degree of accuracy and reliability. Herein probably lie the most

significant errors in the research findings.

The theoretical upper limit of the supply of vocational and technical education personnel is a function of the total number of vocationally certified teachers. Obviously, not all certified teachers will plan to teach. Given a decline in industrial or business positions, many will use certification as a lever. However, all certified teachers are theoretically available. Therefore, all certified teachers (including those who do not plan to teach) are included in the theoretical supply estimate. The better situational estimate of supply and demand is that which has been summarized and compiled from the survey instruments, i.e., the supply and demand reported at the local district level.

The presentation of the results are organized around the specific objectives. Each specific objective is referenced in presenting the data, and appropriate discussion is given for clarification. Theoretical data resulting from the application of the supply model are also given.

Theoretical Supply of Vocational and Technical Education Personnel

In order to estimate the supply of vocational and technical education personnel by program area and geographic region within the State of Florida, information has been extracted from several sources. The method of estimation and the sources employed are reviewed below.

The formulative method of Goldstein and Swerdloff (1967) was used in a modified form to estimate and project the supply of vocational and technical education personnel from 1975 to 1984. The model used to estimate supply and the information sources employed to provide the necessary data are indicated in the following equation:

$$(E_{fc}+UE_{fc}) + (TP+OC+E_{ac}+UC_{ac}) - (D+R+T+GM) = Supply_{X+1}$$

where,

$(E_{fc}+UE_{fc})$ = Supply for Year X

$(TP+OC+E_{ac}+UC_{ac})$ = Inflow factors

(D+R+T+GM) = Outflow factors

E_{fc} = Persons employed with Florida Certification

UE_{fc} = Persons unemployed with Florida Certification

TP = Teacher Education Training Programs

OC = Entrants from other occupations

E_{ac} = Persons employed with alien certification

UE_{ac} = Persons unemployed with alien certification

D = Deaths

R = Retirement

T = Transfers

GM = Geographic Mobility out-of-state

The data used to supply E_{fc} and UE_{fc} were obtained from the Department of Education Certification Bureau (Knott Data Center) in a special report which indicated the number of instructors certified to teach vocational and technical education by program area in the State of Florida. The

data were classified by program area and certificate type and are presented in Table 3.

Table 3

CERTIFIED VOCATIONAL AND TECHNICAL EDUCATION PERSONNEL

Category	Temporary	Part-Time	Regular
Agriculture	97	117	1,265
Business	3	953	2,045
Distributive	61	1,155	913
Industrial Education	738	4,887	1,708
Adult Education	22	654	4,009
Health & Public Service	187	637	997
Diversified	396	1	1,791
Industrial Arts	15	9	2,409
Home Economics	109	555	4,926
Administration	0	0	628

The supply from teacher education training programs (TP) was taken from university funding guides. This data is given in Table 16 and indicates productivity for the years 1974 and 1975. The supply from TP was estimated as the mean of the 1974 and 1975 figures.

The number of personnel entering vocational and technical education from other fields was calculated from data previously cited (Knott Data Center). The ratio of temporary to regular certificates was assumed equal to the ratio of supply from business and industry to supply from teacher education training programs.

The data used to obtain E_{ac} and UE_{ac} were taken from

information indicating the population of employable persons (age 25-64) in the State of Florida (Florida Statistical Abstracts, 1974 through 1976). As stated in the Trend Data section, the estimated percent distribution of population by age group has not changed significantly during the years 1974 through 1976. Rather than any significant change in age group distribution of previous Florida residents, it was assumed that population change within the 25-64 age group is primarily composed of state net migration.

Estimates of deaths, retirements, transfers, and geographic mobility were gleaned from information supplied in response to question number two on the local district questionnaire. The number of replacements in vocational and technical education positions were assumed to be equal to vacancies which were caused death, retirement, transfer, or emigration.

In summary, a restatement of the assumptions required when using the theoretical model follows:

(1) That the proportion of total temporary certificates to total regular certificates is equal to the proportion of supply from business and industry when compared to annual teacher productivity.

(2) That the Florida immigration rate of persons age 25-64 is equal to the percent in-flow of out-of-state vocational and technical education personnel.

(3) That the percent of out-flow indicated by the sample of employed personnel is equal to out-flow in the population of certified vocational and technical personnel.

It must be realized that in some instances these assumptions may be either difficult to visualize or to justify. Utilizing these assumptions, two projected estimates of supply have been constructed. The Lower Supply Estimate, shown in Table 4, excluded projections of OC, E_{ac}, and UE_{ac}. The Upper Supply Estimate, shown in Table 5, included all factors present in the model and, therefore, relied heavily on the assumptions previously stated. Statewide Lower and Upper Supply Estimates of Vocational and Technical Education Personnel by Program Area are given in Table 6.

It may be noted (Table 6) that estimates of supply in the areas of Health and Public Service and Diversified Education show a decrease in certified vocational and technical education personnel over the next five years. The decrease of certified personnel within these program areas is also shown in Tables 4 and 5, indicating decreases in all five regions in both Health and Public Service and Diversified Education. The largest increases in qualified personnel appear to be in the fields of Business Education and Distributive Education, where the estimated percentage of change from 1976 to 1981 ranges between 16.0 and 11.1%.

The field of Agri-Business also shows a large increase

Table 4

LOWER SUPPLY ESTIMATE OF VOCATIONAL-TECHNICAL EDUCATION PERSONNEL

(NUMBER OF PROJECTED CERTIFIED PERSONNEL)

Supply	Year					
	1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981
Agri-Business						
Region I	193	197	201	206	211	216
Region II	257	262	267	272	276	280
Region III	269	274	279	284	289	294
Region IV	402	409	416	423	430	438
Region V	355	359	363	367	371	375
Business Education						
Region I	312	323	334	345	356	367
Region II	483	500	517	534	551	568
Region III	438	454	470	486	502	518
Region IV	849	879	899	919	939	959
Region V	915	948	981	1014	1047	1080
Distributive Education						
Region I	194	200	206	212	218	224
Region II	134	138	142	146	150	154
Region III	519	534	549	564	579	594
Region IV	562	579	595	612	628	645
Region V	720	741	762	783	804	825
Technical and Industrial						
Region I	865	869	873	877	881	895
Region II	924	929	933	937	942	974
Region III	1320	1327	1334	1341	1348	1355
Region IV	1841	1850	1859	1869	1878	1888
Region V	2387	2395	2408	2420	2433	2445
Health and Public Service						
Region I	195	190	185	180	175	166
Region II	191	186	181	176	169	161
Region III	242	236	230	225	219	213
Region IV	521	514	508	502	497	490
Region V	672	656	649	640	631	622
Diversified Education						
Region I	203	198	196	194	191	189
Region II	214	210	208	206	204	202
Region III	289	285	283	280	278	275
Region IV	626	618	613	608	603	598
Region V	853	843	836	829	822	815
Industrial Arts						
Region I	163	164	164	164	164	164
Region II	372	373	373	373	373	373
Region III	363	364	364	365	365	365
Region IV	581	582	582	582	583	583
Region V	954	955	956	957	958	959
Home Economics						
Region I	660	663	666	669	672	675
Region II	889	893	897	901	905	909
Region III	1062	1067	1071	1076	1080	1084
Region IV	1314	1320	1325	1331	1336	1342
Region V	1666	1673	1681	1688	1696	1703

Table 5

UPPER SUPPLY ESTIMATE OF VOCATIONAL-TECHNICAL EDUCATION PERSONNEL

(NUMBER OF PROJECTED CERTIFIED PERSONNEL)

Supply	Year					
	1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981
Agri-Business						
Region I	193	199	204	210	217	223
Region II	257	265	271	278	283	289
Region III	269	277	283	290	296	303
Region IV	402	414	423	433	442	453
Region V	355	361	367	373	379	385
Business Education						
Region I	312	324	336	348	360	372
Region II	483	501	519	537	555	573
Region III	438	455	472	489	506	523
Region IV	849	881	903	925	947	969
Region V	915	950	985	1020	1055	1090
Distributive Education						
Region I	194	201	208	215	222	229
Region II	134	139	144	149	154	159
Region III	519	536	553	570	587	604
Region IV	562	581	599	618	636	655
Region V	720	745	770	795	820	845
Technical and Industrial						
Region I	865	880	895	910	925	940
Region II	924	941	957	974	990	1007
Region III	1320	1344	1368	1391	1416	1440
Region IV	1841	1873	1905	1937	1969	2001
Region V	2383	2426	2470	2513	2557	2600
Health and Public Service						
Region I	195	193	191	189	187	185
Region II	191	189	187	185	184	183
Region III	242	239	236	233	230	227
Region IV	521	515	509	503	497	491
Region V	672	665	658	651	644	637
Diversified Education						
Region I	203	199	197	195	193	191
Region II	214	211	209	207	205	203
Region III	289	286	284	282	280	278
Region IV	626	619	615	611	607	603
Region V	853	845	839	833	827	821
Industrial Arts						
Region I	163	165	166	167	168	169
Region II	372	375	377	379	381	383
Region III	363	366	368	370	373	375
Region IV	581	585	588	591	595	598
Region V	954	960	967	973	980	986
Home Economics						
Region I	660	664	668	672	676	680
Region II	889	894	899	904	909	914
Region III	1062	1068	1073	1079	1084	1090
Region IV	1314	1321	1328	1335	1342	1349
Region V	1666	1675	1686	1695	1705	1714

Table 6

LOWER & UPPER SUPPLY ESTIMATES OF VOCATIONAL-TECHNICAL EDUCATION PERSONNEL

(BY PROGRAM AREA IN THE STATE OF FLORIDA)

Program Area		Year						% of Change
		1975-1976	1976-1977	1977-1978	1978-1979	1979-1980	1980-1981	1976-1981
Agri-Business Education	Lower	1476	1501	1526	1552	1578	1604	8.0
	Upper	1476	1516	1556	1596	1636	1676	11.9
Business Education	Lower	2997	3104	3201	3298	3395	3492	14.2
	Upper	2997	3111	3225	3339	3453	3567	16.0
Distributive Education	Lower	2129	2182	2235	2288	2341	2394	11,1
	Upper	2129	2202	2275	2348	2421	2494	14.6
Technical & Industrial	Lower	7333	7448	7407	7444	7482	7557	3.0
	Upper	7333	7464	7595	7725	7857	7988	8.2
Health and Public Service	Lower	1821	1782	1753	1723	1691	1652	-10.2
	Upper	1821	1801	1781	1761	1742	1723	- 5.7
Diversified Education	Lower	2185	2154	2136	2117	2098	2079	- 5.1
	Upper	2185	2160	2144	2128	2112	2096	- 4.2
Industrial Arts Education	Lower	2433	2438	2439	2441	2443	2444	0.5
	Upper	2433	2451	2469	2487	2505	2523	3.6
Home Economics Education	Lower	5591	5616	5641	5666	5691	5716	2.2
	Upper	5591	5622	5653	5684	5715	5746	2.7

ranging from 8.0% for the statewide lower supply estimate to 11.9% for the statewide upper supply estimate. The remaining three fields of Technical and Industrial Education, Industrial Arts and Home Economics showed little noticeable increase over the five year projected supply estimate. Statewide percent change ranged from 0.5% (lower supply estimate) in Industrial Arts to 8.2% (upper supply estimate) in Technical and Industrial Education.

Practical Supply

As indicated earlier, supply of vocational and technical education personnel is produced by several different delivery systems. Theoretically, this number includes many factors as shown in the supply model. In practice, however, supply can conceivably be quite different from that which may be projected by theoretical models. Subsequently, the most practical index to local district supply is probably related to the number of applicants seeking employment (i.e., those making application for specific vacancies at the local district and community college levels). Obviously, this number will vary from year to year, and most likely is not included in school records. Therefore, it was assumed inappropriate to ask district directors to provide such information over an extended (five year) time span. It was assumed that a reliable index to the number of applicants applying for vacant positions was the number of applicants who normally apply for each position. 43

Practical supply of vocational and technical teaching personnel is shown in Table 7 (adjusted for nonrespondents on percentage population basis) where the average number of applicants per position vacancy is given by level, program area and geographic region of the state (Specific Objective 1). Given the probability that most administrators would prefer a minimum of ten to fifteen applicants per position vacancy, it appears that the only actual oversupply of personnel is reflected in those areas where the average number of applicants per position vacancy exceeds ten to fifteen. As may be seen in Table 7, the numbers approaching or exceeding these values are minimal (only three for local school districts and thirteen for community colleges). This index of supply indicated that if any oversupply of vocational teachers existed at the local school district level it was in Region V for the areas of Distributive Education, Business and Office Education, and Health and Public Service. At the community college level the average number of teachers applying for positions exceeds ten in Agri-Business (Region IV), Business Education (Regions I, II, III, and IV) Distributive Education (Regions I, III, and IV), Health and Public Service (Regions I, III, and IV), Home Economics (Region IV), and Industrial Education (Region IV). At the community college level the apparent oversupply may be due to the attractiveness of community college teaching positions to currently employed local school district teachers as well as business and industry personnel.

Table 7.

AVERAGE NUMBER OF APPLICANTS PER POSITION VACANCY (NORMAL)

Supply of Vocational and Technical Personnel

	REGION I	REGION II	REGION III	REGION IV	REGION V	STATE TOTAL
LOCAL SCHOOL DISTRICTS						
Administration	4.41	4.50	6.44	6.10	6.40	5.23
Guidance and Counseling	5.17	3.40	9.60	16.00	8.00	7.85
Agri-Business	3.64	2.50	5.44	3.29	2.50	3.40
Business Education	4.27	2.72	10.78	5.38	22.83	8.00
Distributive Education	3.08	2.00	7.38	4.57	32.50	8.86
Health and Public Service	2.82	2.63	2.88	2.86	5.83	3.23
Home Economics	5.45	3.50	8.33	5.29	12.20	6.40
Industrial Education	3.43	3.38	5.56	2.67	6.60	4.24
Industrial Arts Education	4.67	1.71	5.67	4.50	8.00	4.77
Diversified	3.09	2.43	5.56	4.13	6.40	4.25
COMMUNITY COLLEGES						
Administration	4.67	11.25	3.33	12.50	4.33	4.89
Guidance and Counseling	5.00	3.75	8.00	17.50	4.33	7.27
Agri-Business	1.50	6.67	3.70	16.67	1.00	5.63
Business Education	41.50	11.70	14.10	18.00	5.75	19.83
Distributive Education	28.25	5.20	13.40	16.00	0.75	16.25
Health and Public Service	13.00	7.50	20.00	16.00	8.25	12.23
Home Economics	10.00	5.25	4.33	18.00	1.50	5.61
Industrial Education	5.00	7.25	8.70	11.25	2.25	5.33
Industrial Arts Education	----	7.50	2.50	----	1.50	4.20
Diversified	----	6.00	5.00	3.50	1.67	3.63

Source of Information - Local District Questionnaire

A greater oversupply exists at the community college level as compared to the local school district level. Some of the community college oversupply may be attributed to those applicants who apply from out-of-state. The number of out-of-state applicants is reflected, in part, in Table 8, which presents the percentage of applicants who have not previously taught in Florida. It may be observed that a higher percentage of community college applicants had not previously taught in Florida as compared to the local district level.

With the exception of programs listed as "other," the percentage of local district applicants to all regions who had not previously taught in Florida ranged from a high of 76.4% for Distributive Education (Region V) to a low of 16.1% for Health and Public Service Education (Region I), Table 8. Similarly, a wide range of community college applicants had not previously taught in Florida (from 0% to essentially 100%).

Indirect Indicators of Supply

It is re-emphasized that the supply of vocational and technical personnel is provided by several different delivery systems. It was considered appropriate to ask local district directors and community college directors of vocational and technical education to indicate: (1) preferred sources of securring personnel, (2) difficulties encountered in finding qualified personnel, and (3) their procedures for searching

Table 8.

PERCENTAGE OF APPLICANTS WHO HAVE NOT PREVIOUSLY TAUGHT IN FLORIDA

		REGION I	REGION II	REGION III	REGION IV	REGION V	STATE TOTAL
LOCAL SCHOOL DISTRICTS	Administration	24.5	28.9	37.9	46.9	21.9	32.9
	Guidance and Counseling	35.5	52.9	48.8	53.9	50.0	48.9
	Agri-Business	31.4	56.7	57.1	43.7	50.0	46.8
	Business Education	21.3	50.0	46.4	62.8	51.1	47.1
	Distributive Education	21.6	52.6	66.1	31.2	76.4	63.2
	Health and Public Service	16.1	61.9	30.4	45.0	60.0	42.3
	Home Economics	25.0	37.1	56.0	45.9	24.6	38.1
	Industrial Education	41.7	55.6	45.0	62.5	33.3	44.8
	Industrial Arts Education	21.4	50.0	42.2	44.4	45.8	38.4
	Diversified Education	29.4	52.9	42.0	39.4	18.7	35.5
	Other	28.6	50.0	33.3	80.6	42.9	50.6
COMMUNITY COLLEGES	Administration	28.5	46.6	45.0	74.0	69.2	57.5
	Guidance and Counseling	100.0	40.0	30.0	80.0	69.2	71.1
	Agri-Business	33.3	45.0	50.0	70.0	33.3	53.8
	Business Education	62.0	45.7	59.1	77.7	47.8	62.2
	Distributive Education	78.5	38.1	45.5	71.9	33.3	54.1
	Health and Public Service	82.7	46.6	78.1	73.4	63.6	72.6
	Home Economics	65.0	38.1	50.0	66.7	33.3	59.5
	Industrial Education	80.0	34.5	71.1	33.3	55.6	50.4
	Industrial Arts Education	----	53.3	50.0	----	33.3	52.2
	Diversified Education	----	50.0	50.0	57.1	33.3	51.9
	Other	----	50.0	58.2	57.1	33.3	54.3

Source - Local District Questionnaire

for applicants. It was anticipated that these data would help identify the primary sources of qualified applicants as well as give some indication of the difficulty administrators experience in finding qualified applicants. These indirect indicators of supply provide an index to the validity of the data on actual supply.

Preferred Sources of Supply of Vocational and Technical Education Personnel

The statewide summaries of sources of securing vocational and technical education personnel (local school districts and community colleges) are presented in Tables 9 and 10. The frequency and percentage of respondents who chose specific categories as first, second or third choices are given.

I. Local District

In order of preference, the predominate sources of vocational and technical education personnel that local school administrators indicated as their first choice were teacher education institutions, hiring away from other institutions, and hiring away from local business and industry. The only major departure from this order of preference was for the Industrial Education personnel where hiring away from local business and industry interchanged with teacher education institutions in order of preference. It should be noted that a higher percentage of respondents

Table 9.

STATE WIDE SOURCE OF SECURING VOCATIONAL-TECHNICAL PERSONNEL
(NUMBER AND PERCENTAGE)

LOCAL SCHOOL DISTRICTS

	Teacher Education Institutions		Hire Away From Another Institution		Part-Time Place On Full-Time		Hire Away From Technical School or Community College		Hire Away From Local Business Industry		Hire Away From Non-Local Business Industry		Other		No Response	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Administration																
1st Choice	16	19.3	11	13.3	1	1.2	1	1.2	2	2.4	0	0	9	10.8	43	51.3
2nd Choice	4	4.8	20	24.1	4	4.8	6	7.2	3	3.6	1	1.2	1	1.2	44	53.1
3rd Choice	13	15.7	4	4.8	4	4.8	9	10.8	0	0	3	3.6	0	0	50	60.3
Guidance and Counselling																
1st Choice	19	22.8	15	18.1	3	3.6	0	0	3	3.6	0	0	5	6.0	27	32.5
2nd Choice	11	13.3	19	22.9	3	3.6	7	8.4	6	7.2	1	1.2	2	2.4	34	41
3rd Choice	12	14.5	14	16.9	4	4.8	12	14.5	4	4.8	3	3.6	1	1.2	33	39.7
Agri-Business																
1st Choice	25	30.1	12	14.5	3	3.6	1	1.2	3	3.6	0	0	1	1.2	38	45.8
2nd Choice	14	16.9	17	20.5	1	1.2	2	2.4	9	10.8	2	2.4	0	0	38	45.8
3rd Choice	7	8.4	5	6.0	6	7.2	12	14.5	5	6.0	4	4.8	0	0	44	53.1
Business & Office Education																
1st Choice	23	27.7	13	15.7	3	3.6	1	1.2	5	6.0	1	1.2	1	1.2	36	43.4
2nd Choice	11	13.3	22	26.5	2	2.4	1	1.2	6	7.2	3	3.6	0	0	38	45.8
3rd Choice	8	9.6	4	4.8	6	7.2	9	10.8	11	13.3	1	1.2	0	0	44	53.1
Distributive																
1st Choice	19	22.9	14	16.9	3	3.6	1	1.2	7	8.4	0	0	1	1.2	38	45.8
2nd Choice	13	15.7	18	21.7	2	2.4	1	1.2	7	8.4	0	0	0	0	42	50.0
3rd Choice	9	10.8	4	4.8	3	3.6	7	8.4	12	14.5	2	2.4	1	1.2	38	45.7
Health & Public Service																
1st Choice	12	14.4	13	15.7	6	7.2	1	1.2	9	10.8	1	1.2	1	1.2	41	49.3
2nd Choice	15	18.1	19	22.8	4	4.8	3	3.6	6	7.2	1	1.2	0	0	35	42.2
3rd Choice	12	14.4	6	7.2	3	3.6	8	9.6	6	7.2	2	2.4	0	0	46	55.6
Home Economics																
1st Choice	27	32.5	12	14.5	3	3.6	0	0	3	3.6	0	0	1	1.2	37	44.6
2nd Choice	14	16.9	23	27.7	1	1.2	2	2.4	4	4.8	1	1.2	0	0	38	45.8
3rd Choice	7	8.4	3	3.6	8	9.6	8	9.6	8	9.6	4	4.8	0	0	50	60.4
Industrial Education																
1st Choice	9	10.8	12	14.5	5	6.0	1	1.2	22	26.5	0	0	1	1.2	33	39.8
2nd Choice	8	9.6	8	9.6	4	4.8	4	4.8	11	13.3	5	6.0	0	0	33	39.8
3rd Choice	11	13.3	4	4.8	3	3.6	7	8.4	9	10.8	10	12.0	0	0	39	47.1
Industrial Arts																
1st Choice	26	31.3	15	18.1	3	3.6	0	0	3	3.6	0	0	1	1.2	35	42.2
2nd Choice	12	14.5	26	31.3	1	1.2	4	4.8	6	7.2	1	1.2	0	0	33	39.8
3rd Choice	9	10.8	3	3.6	5	6.0	10	12.0	6	7.2	3	3.6	0	0	47	56.8
Diversified																
1st Choice	19	22.9	14	16.9	3	3.6	0	0	6	7.2	0	0	2	2.4	39	47.0
2nd Choice	14	16.9	24	28.9	1	1.2	4	4.8	4	4.8	1	1.2	0	0	35	42.2
3rd Choice	11	13.3	8	9.6	3	3.6	10	12.0	5	6.0	1	1.2	0	0	45	54.3
Other																
1st Choice	13	15.7	6	7.2	3	3.6	0	0	3	3.6	0	0	0	0	58	69.9
2nd Choice	7	8.4	13	15.7	1	1.2	0	0	3	3.6	0	0	0	0	59	71.1
3rd Choice	6	7.2	1	1.2	1	1.2	5	6.0	5	6.0	2	2.4	1	1.2	67	80.8

Source - Local District Questionnaire

Table 10.

STATE WIDE SOURCE OF SECURING VOCATIONAL-TECHNICAL PERSONNEL
(NUMBER AND PERCENTAGE)

COMMUNITY COLLEGES

	Teacher Education Institutions		Hire Away From Another Institution		Part-Time Place on Full-Time		Hire Away From Technical School or Community College		Hire Away From Local Business Industry		Hire Away From Non-Local Business Industry		Other		No Response	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Administration																
1st Choice	2	8	5	20	1	4	4	6	0	0	1	4	1	4	11	44
2nd Choice	1	4	5	20	3	12	7	28	1	4	0	0	0	0	8	32
3rd Choice	8	32	2	8	0	0	3	12	3	12	1	4	1	4	7	28
Guidance and Counselling																
1st Choice	3	12	5	20	0	0	2	8	0	0	1	4	0	0	14	56
2nd Choice	4	16	3	12	1	4	4	16	2	8	0	0	0	0	11	44
3rd Choice	4	16	3	12	0	0	3	12	3	12	0	0	1	4	11	44
Agri-Business																
1st Choice	2	8	3	12	4	16	4	16	1	4	2	8	1	4	8	32
2nd Choice	4	16	1	4	3	12	2	8	4	16	3	12	0	0	8	32
3rd Choice	2	8	2	8	0	0	3	12	2	8	2	8	1	4	13	52
Business & Office Education																
1st Choice	1	4	5	20	6	24	6	24	2	8	1	4	1	4	3	12
2nd Choice	4	16	5	20	3	12	3	12	4	16	3	12	0	0	3	12
3rd Choice	8	32	3	12	1	4	5	20	3	12	2	8	1	4	2	8
Distributive Education																
1st Choice	2	8	3	12	3	12	5	20	5	20	2	8	1	4	4	16
2nd Choice	5	20	2	8	4	16	4	16	2	8	2	8	0	0	6	24
3rd Choice	7	28	4	16	1	4	3	12	3	12	1	4	1	4	5	20
Health - Public Service																
1st Choice	3	12	5	20	4	16	3	12	4	16	2	8	0	0	4	16
2nd Choice	1	4	7	28	3	12	7	28	0	0	0	0	0	0	4	16
3rd Choice																
Home Economics																
1st Choice	1	4	3	12	4	16	1	4	2	8	1	4	1	4	12	48
2nd Choice	3	12	2	8	2	8	4	16	1	4	1	4	0	0	12	48
3rd Choice	3	12	3	12	0	0	4	16	2	8	0	0	1	4	12	48
Industrial Education																
1st Choice	2	8	2	8	3	12	2	8	4	16	4	16	0	0	8	32
2nd Choice	3	12	2	8	4	16	3	12	4	16	1	4	0	0	8	32
3rd Choice	5	20	2	8	2	8	6	24	1	4	1	4	1	4	7	28
Industrial Arts																
1st Choice	2	8	2	8	0	0	1	4	2	8	2	8	2	8	12	48
2nd Choice	2	8	1	4	2	8	2	8	0	0	0	0	0	0	18	72
3rd Choice	2	8	2	8	0	0	2	8	0	0	0	0	1	4	18	72
Diversified																
1st Choice	2	8	0	0	1	4	1	4	1	4	1	4	3	12	23	91
2nd Choice	2	8	1	4	2	8	2	8	0	0	0	0	0	0	17	68
3rd Choice	2	8	1	4	1	4	1	4	0	0	0	0	0	0	20	80
Other																
1st Choice	1	4	2	8	0	0	2	8	1	4	1	4	1	4	17	68
2nd Choice	2	8	3	12	2	8	2	8	0	0	0	0	0	0	14	56
3rd Choice	2	8	2	8	1	4	2	8	1	4	1	4	0	0	16	64

indicated their preference for Administration and Guidance and Counseling personnel as "other" and wrote in "promotion from within" as the preferred source for these positions. Had this category been included, a higher percentage of respondents would probably have indicated "promotion from within" as the preferred source for Administrative and Guidance and Counseling personnel.

II. Community College

No category of supply of vocational and technical education personnel at the community college level emerged as the predominant source for all program areas. The primary source which community college administrators preferred to obtain personnel from were (1) hiring away from technical schools and community colleges, (2) teacher education institutions, and (3) hiring from other institutions.

Search for Applicants

As may be observed from Table 11 (local school districts) the higher frequency and percentage of those responding indicated that the predominant processes used in searching for vocational and technical education applicants were (1) seek recommendations from existing school personnel, (2) contact state university teacher education personnel, and (3) list vacancy with state university. In comparison, for all program areas the greatest percentage of respondents

Table 11

SUMMARY OF STATEWIDE PROCESSES FOR

SEARCHING FOR APPLICANTS

(NUMBER OF RESPONDENTS AND PERCENTAGE)

LOCAL SCHOOL DISTRICTS

	Recommendations from Existing School Personnel		Recommendations by School Board Members		List Vacancy With State Universities		Place Ads In News Media		Contact State University Teacher Education Personnel		Place Ads In Professional Publications		Other		No Response
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Administrative	29	57	2	4	6	12	0	0	7	14	1	2	6	12	32
Guidance and Counselling	27	51	1	2	5	9	1	2	15	28	0	0	4	8	30
Agri-Business	15	23	1	2	12	19	1	2	24	38	1	2	10	16	19
Business and Office Education	20	37	1	2	10	19	2	4	16	30	1	2	4	7	29
Distributive	16	30	1	2	11	20	1	2	18	33	1	2	6	11	29
Health & Public Service	15	27	1	2	11	20	3	5	17	31	1	2	7	13	28
Home Economics	12	23	1	2	10	19	1	2	21	40	1	2	7	13	30
Industrial	16	31	4	8	7	14	4	8	11	22	1	2	8	16	32
Industrial Arts	13	24	0	0	13	24	1	2	23	42	1	2	3	6	29
Diversified	18	35	1	2	10	19	0	0	19	37	0	0	4	7	31
Other	8	38	0	0	2	10	0	0	6	28	0	0	5	24	62

Source - Local District Questionnaire

at the community college level, indicated that the choice which best described the process used for searching for applicants was to seek recommendations from existing school personnel (Table 12). Several community college respondents indicated that the processes most often utilized in searching for staff was to (1) list vacancies with state universities and (2) place ads in the news media.

These results may provide some explanation for the low number of applications for vacant positions in vocational education. For example, it appears that the predominant process for searching for vocational instructors is to seek the recommendations of existing staff. This process would net fewer applicants for vacancies as compared to a widely advertised search. While it is anticipated that vocational areas which recruit from industry would use the current staff to identify prospective staff, the high dependence on this source of supply for teachers was not anticipated. Perhaps oversupply in other teaching fields has affected the procedures utilized in vocational areas.

From the statewide summary of the difficulty in locating qualified personnel, Table 13, it may be observed that district directors indicated that Guidance and Counseling, Business and Office, and Diversified personnel could be located with relative ease. For all other program areas, the directors indicated that it was relatively difficult to locate qualified personnel. The program areas that respondents indicated as being the most difficult to identify

Table 12

SUMMARY OF STATEWIDE PROCESSES FOR

SEARCHING FOR APPLICANTS

(NUMBER OF RESPONDENTS AND PERCENTAGE)

COMMUNITY COLLEGES

	Recommendations from Existing School Personnel		Recommendations by School Board Members		List Vacancy with State Universities		Place Ads in News Media		Contact State University Teacher Education Personnel		Place Ads in Professional Publications		Other		No Response
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Administrative	11	46	1	4	4	17	1	4	3	12	2	8	2	8	1
Guidance and Counseling	7	33	0	0	6	29	1	5	3	14	2	9	2	9	4
Agri-business	9	43	0	0	6	29	1	5	3	14	1	5	1	5	4
Business and Office Education	9	36	1	4	5	20	3	16	4	16	0	0	2	8	0
Distributive	10	42	1	4	0	0	2	8	4	16	4	16	3	12	1
Health & Public Service	9	36	0	0	4	16	0	0	5	20	6	24	1	4	0
Home Economics	9	45	0	0	5	25	2	10	3	15	1	5	0	0	5
Industrial	7	29	0	0	5	21	3	13	5	21	3	13	1	4	1
Industrial Arts	7	41	0	0	4	26	1	6	3	17	2	12	0	0	8
Diversified	5	38	1	7	3	23	1	7	2	15	1	7	0	0	12
Other	5	36	0	0	2	14	0	0	2	14	3	21	2	14	11

Source - Local District Questionnaire

Table 13

STATEWIDE SUMMARY OF DIFFICULTY IN LOCATING QUALIFIED PERSONNEL

(NUMBER AND PERCENTAGE OF RESPONDENTS)

LOCAL SCHOOL DISTRICTS

	Very Difficult		Difficult		Easy		Very Easy		No Response
	No.	%	No.	%	No.	%	No.	%	
Administration	10	22	20	44	9	20	6	13	38
Guidance and Counselling	9	19	16	34	18	38	4	9	36
Agri-Business	29	60	12	25	5	10	2	4	35
Business and Office Education	2	4	15	33	24	53	4	9	38
Distributive Education	6	19	13	42	10	32	2	6	52
Health and Public Service	6	17	22	61	6	7	2	6	47
Home Economics	2	4	18	41	18	41	6	14	39
Industrial Education	13	33	16	41	8	21	2	5	44
Industrial Arts Education	14	29	22	46	10	21	2	3	35
Diversified Education	2	5	15	39	17	45	4	11	45
Other	2	16	5	42	5	42	0	0	71

Source - Local District Questionnaire

qualified staff was Agri-Business and Natural Resources. A similar trend is seen in the community college data, Table 14. Community college vocational and technical education program directors rated it easy to locate Guidance and Counselling and Business and Office personnel, whereas all other program areas were rated from difficult to very difficult. It may be noted that these data provide support for the indices of supply that utilized the actual number of applicants for positions and the number of graduates from preservice programs per 100 FTE instructors employed. The only deviation that was observed in these data in comparison to prior indices is that respondents indicated that Industrial Arts instructors were difficult to locate, whereas the production index would indicate an oversupply.

Demand

New demand for vocational and technical education personnel is shown in Table 15 (Specific Objective 3). Data on new demand, i.e., additions and replacements (turnovers), were obtained from local district and community college survey questionnaires. To arrive at the total demand picture, the number of personnel employed for each specific year should be added to the figures in Table 15. In addition to regional demand estimates, the state total demand picture is also given.

Table 14

STATEWIDE SUMMARY OF DIFFICULTY IN LOCATING QUALIFIED PERSONNEL

(NUMBER AND PERCENTAGE OF RESPONDENTS)

COMMUNITY COLLEGES

	Very Difficult		Difficult		Easy		Very Easy		No Response
	No.	%	No.	%	No.	%	No.	%	
Administration	4	25	6	38	3	19	3	19	9
Guidance and Counselling	0	0	5	42	5	42	2	16	13
Agri-Business	4	27	7	47	0	0	4	27	10
Business and Office Education	1	5	7	30	10	43	5	22	2
Distributive Education	2	9	9	41	7	32	4	18	3
Health and Public Service	6	33	8	44	4	22	0	0	7
Home Economics	0	0	10	71	3	21	1	7	11
Industrial Education	5	4	8	44	5	28	0	0	7
Industrial Arts Education	0	0	2	100	0	0	0	0	23
Diversified Education	0	0	2	50	1	25	1	25	21
Other	2	33	1	17	2	33	1	17	19

Source - Local District Questionnaire

Table 15

NEW DEMAND FOR VOCATIONAL-TECHNICAL EDUCATION PERSONNEL
(Number)

LOCAL SCHOOL DISTRICTS

	REGION I	REGION II	REGION III	REGION IV	REGION V	STATE TOTALS
Adminstrative						
1974-1975	9	1	14	2	1	27
1975-1976	5	6	8	3	3	25
1976-1977	3	1	10	4	0	18
1980-1981*	11	3	17	16	3	50
Guidance and Counseling						
1974-1975	9	5	23	11	15	63
1975-1976	4	4	16	13	16	53
1976-1977	4	3	5	22	9	42
1980-1981*	14	5	10	29	21	79
Agri- Business						
1974-1975	13	6	10	8	19	56
1975-1976	18	3	11	14	8	54
1976-1977	14	7	13	13	15	62
1980-1981*	18	13	20	20	3	74
Business education						
1974-1975	10	13	35	42	50	150
1975-1976	9	7	27	16	20	69
1976-1977	9	7	11	25	16	64
1980-1981*	21	11	51	61	32	176
Distributive education						
1974-1975	6	5	12	8	4	35
1975-1976	7	3	5	6	21	42
1976-1977	3	3	8	8	27	49
1980-1981*	14	6	40	16	46	122
Health and Public Service						
1974-1975	2	4	9	20	36	71
1975-1976	4	6	11	32	32	85
1976-1977	3	2	6	20	35	66
1980-1981*	11	8	23	38	67	147
Home Economics						
1974-1975	3	7	39	40	34	129
1975-1976	16	9	19	19	21	82
1976-1977	2	8	7	29	23	69
1980-1981*	18	25	16	46	70	175
Industrial						
1974-1975	32	27	31	38	31	159
1975-1976	47	26	30	18	28	149
1976-1977	21	16	21	47	24	129
1980-1981*	57	65	54	82	90	328
Industrial Arts						
1974-1975	21	16	19	10	89	155
1975-1976	10	11	16	12	43	92
1976-1977	9	5	11	22	56	103
1980-1981*	14	22	21	36	66	159
Diversified education						
1974-1975	4	3	8	9	4	28
1975-1976	4	1	5	13	3	26
1976-1977	3	1	3	9	16	33
1980-1981*	10	3	12	15	15	55

Source - Local District Questionnaire *Cumulative through 1980-1981

Table 15 (continued)

NEW DEMAND FOR VOCATIONAL-TECHNICAL EDUCATION PERSONNEL
(Number)

COMMUNITY COLLEGES

	REGION I	REGION II	REGION III	REGION IV	REGION V	STATE TOTALS
Administrative						
1974-1975	3	1	3	1	2	10
1975-1976	1	2	1	1	2	7
1976-1977	1	3	1	1	2	8
1980-1981*	4	1	5	0	2	12
Guidance and Counseling						
1974-1975	1	0	1	0	4	6
1975-1976	1	0	0	6	4	11
1976-1977	1	0	[illegible]	4	0	5
1980-1981*	0	1	1	4	1	7
Agri-Business						
1974-1975	1	3	1	0	1	6
1975-1976	1	0	0	0	0	1
1976-1977	1	0	1	1	1	4
1980-1981*	2	3	2	0	3	10
Business Education						
1974-1975	4	1	4	4	4	17
1975-1976	1	1	5	8	3	18
1976-1977	3	1	5	4	9	22
1980-1981*	10	8	13	9	2	42
Distributive Education						
1974-1975	2	0	0	2	0	4
1975-1976	1	0	0	0	2	3
1976-1977	3	0	3	2	1	9
1980-1981*	1	0	9	5	3	21
Health and Public Service						
1974-1975	3	1	10	6	11	31
1975-1976	4	24	5	5	14	52
1976-1977	3	10	15	7	9	44
1980-1981*	7	6	21	18	29	81
Home Economics						
1974-1975	1	0	1	0	0	2
1975-1976	1	0	1	0	0	2
1976-1977	2	0	2	0	0	4
1980-1981*	2	0	6	4	0	12
Industrial Education						
1974-1975	6	18	8	3	1	36
1975-1976	11	5	5	0	11	32
1976-1977	12	4	18	6	6	46
1980-1981*	16	19	24	13	7	79
Industrial Arts						
1974-1975	0	0	0	0	0	0
1975-1976	0	0	0	0	0	0
1976-1977	0	0	0	0	0	0
1980-1981*	0	0	0	2	0	2
Diversified Education						
1974-1975	0	0	0	0	0	0
1975-1976	0	0	0	0	0	0
1976-1977	0	0	0	0	0	0
1980-1981*	0	0	0	0	0	0

Source - Local District Questionnaire *Cumulative through 1980-1981

New demand for vocational and technical personnel is greatest in the areas of Health and Public Service and Industrial Education for all regions at the community college level. Similarly, Industrial Education shows the greatest cumulative demand through 1980 at the local district level across all regions, followed by Health and Public Service, Business Education, Industrial Arts and Home Economics Education (all at approximately the same projected demand level).

The projected total new demand for vocational personnel across all program areas for the year 1976-1977 is greatest in Region V, followed by Regions IV, III, I and II, in that order. Region V projected a high of 251 new vocational education personnel. Region II projected a new demand of 72 personnel for 1976-1977. The cumulative new demand for 1980-1981 may be found in the table. It should be noted that the cumulative new demand is the least reliable, i.e., the projections made by the respondents rarely exceed the demand for the combined years of 1974-1975 and 1975-1976.

Preservice Productivity, Capacity and Discrepancy

Statewide university productivity of teacher educators is given in Table 16. Productivity information was obtained from the University Funding Guides (current and past year). In addition, capacity, given current resources of the teacher educator institutions, is shown along with the

Table 16

PRODUCTIVITY AND CAPACITY OF PRESERVICE PROGRAMS 1974 - 1975

		Productivity*	Capacity	Discrepancy
Administrative	74	----	50	----
	75		50	
Guidance and Counselling	74	----	60	----
	75		60	
Diversified Education	74	0	10	+10
	75	0	10	+10
Agri-Business	74	48	78	+30
	75	44	78	+34
Business Education	74	188	171**	-17
	75	180	171**	- 9
Distributive Education	74	26	90	+64
	75	71	90	+19
Health & Public Service	74	56	110	+54
	75	13	110	+97
Home Economics	74	126	142**	+16
	75	113	142**	+29
Industrial Education	74	98	217**	+119
	75	118	217**	+99
Industrial Arts Education	74	131	114**	-17
	75	106	114**	+ 8

*From University Funding Guides

**Capacity adjusted for Non-Respondents. Source - University Teacher Education Questionnaire

discrepancy between productivity and capacity (Specific Objectives 2, 4, and 5).

There are no university productivity programs which prepare preservice Administrative and Guidance and Counselling personnel specifically for vocational education. In many instances, Administrative personnel are promoted from within specific programs after inservice courses are taken in Secondary or Post-Secondary Administration.

It may be observed from the data presented in Table 16 that in most cases preservice programs are capable of producing more preservice teachers than they are currently producing. University respondents in the areas of Business and Office, Home Economics, and Industrial Arts programs have indicated productivity beyond capacity on a statewide basis while all other program areas indicate that capacity exceeds productivity. Thus, in these program areas additional personnel needed can be prepared in existing preservice programs (if students can be attracted).

It cannot be concluded that productivity from a given teacher education institution is directed toward a specific geographic region of the state. Many graduates, for example, from Florida Atlantic University, may apply for teaching positions in other regions. Given the inter-regional mobility factor, the data were better summarized on a statewide basis.

Information obtained from the university questionnaires indicated that preservice productivity could not

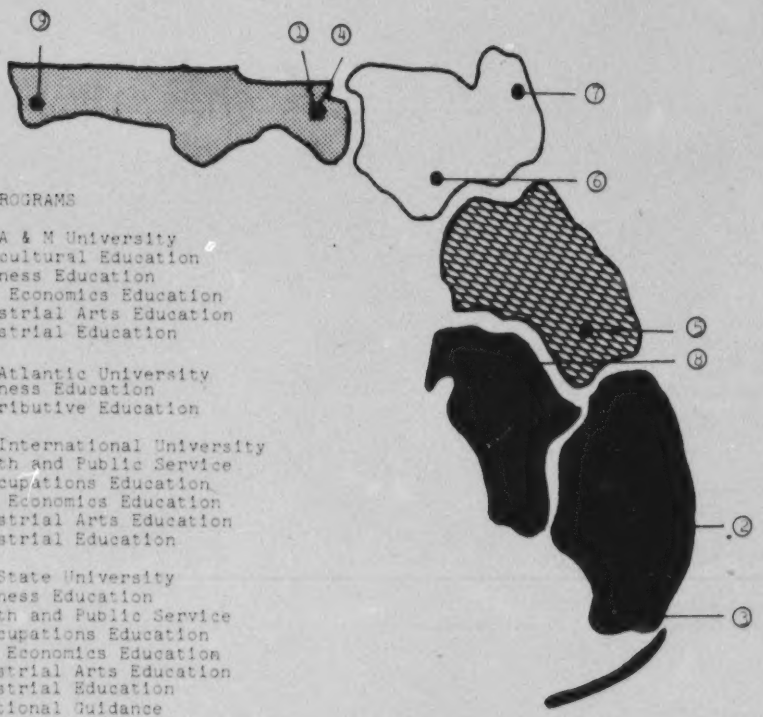
be presented by educational level. In most cases, productivity was indicated at all levels (K-12 and post-secondary). Therefore, productivity and capacity data represent all levels.

Comparison of Preservice Program Location with Scatter of Vocational and Technical Programs

An attempt has been made to show new demand for vocational and technical education personnel as it is related to the location of preservice programs in Map 2. Total aggregate demand across all program areas is given for the 1975-1976 year. It might be observed that Region II indicated the least demand for new vocational personnel, while Region V has indicated the greatest demand. A comparison may be made of the location of preservice programs and the general scatter of vocational and technical programs by program areas (Specific Objective 6) from Table 17.

Scatter of vocational and technical programs is understood to be a function of the total number of vocational and technical personnel employed. Therefore, rather than list individual local district programs, the total unduplicated number of personnel employed (both full and part-time) is given. For example, it may be observed that Region III employed 547 elementary and secondary Home Economics teachers in 1975-1976, and no preservice Home Economics education programs are located in that region. On the other hand, Region I employed 386 elementary and

Map 2



PRESERVICE PROGRAMS

① Florida A & M University
- Agricultural Education
- Business Education
- Home Economics Education
- Industrial Arts Education
- Industrial Education

② Florida Atlantic University
- Business Education
- Distributive Education

③ Florida International University
- Health and Public Service Occupations Education
- Home Economics Education
- Industrial Arts Education
- Industrial Education

④ Florida State University
- Business Education
- Health and Public Service Occupations Education
- Home Economics Education
- Industrial Arts Education
- Industrial Education
- Vocational Guidance

⑤ Florida Technological University
- Business Education
- Health and Public Service Occupations Education
- Industrial Education

⑥ University of Florida
- Agricultural Education
- Business Education

⑦ University of North Florida
- Business Education
- Distributive Education
- Industrial Education

⑧ University of South Florida
- Business Education
- Distributive Education
- Health and Public Service Occupations Education
- Industrial Education

⑨ University of West Florida
- Business Education
- Distributive Education
- Health and Public Service Occupations Education
- Industrial Arts Education
- Industrial Education
- Home Economics Education

New Demand for Vocational-Technical Personnel
(all programs 1976-1977)

- very heavy 225-275
- heavy 175-225
- moderately heavy 125-175
- medium 75-125
- light 50-75

Table 17

A COMPARISON OF THE LOCATION OF PRESERVICE PROGRAMS
AND SCATTER OF VOCATIONAL-TECHNICAL PROGRAMS

		Region I		Region II		Region III		Region IV		Region V	
		Local District	Community College	Local District	Community College	Local District	Community College	Local District	Community College	Local District	Community College
Administration	Employed Vo-Tech Personnel	93	16	54	37	90	66	91	23	111	41
	#Preservice Programs	0	0	0	0	0	0	0	0	0	0
Guidance and Counselling	Employed Personnel	93	8	31	20	47	5	112	8	97	11
	#Preservice Programs	0	0	0	0	0	0	0	0	0	0
Agri-Business	Employed Personnel	120	9	146	25	167	12	260	9	224	11
	#Preservice Programs	1	1	1	1	0	0	0	0	0	0
Business Education	Employed Personnel	272	111	314	165	288	150	590	250	758	149
	#Preservice Programs	3	3	2	2	1	1	1	1	1	1
Distributive Education	Employed Personnel	102	48	71	78	181	161	235	134	335	140
	#Preservice Programs	1	1	1	1	0	0	1	1	1	1
Health and Public Service	Employed Personnel	115	89	35	103	52	122	173	201	212	271
	#Preservice Programs	2	2	0	0	1	1	1	1	1	1
Home Economics	Employed Personnel	308	11	348	154	547	59	736	9	915	31
	#Preservice Programs	3	3	0	0	0	0	1	1	1	1
Industrial Education	Employed Personnel	383	169	235	236	337	354	717	56	940	319
	#Preservice Programs	3	3	1	1	1	1	1	1	1	1
Industrial Arts	Employed Personnel	96	0	179	0	174	0	280	0	459	0
	#Preservice Programs	3	0	0	0	0	0	1	0	1	0
Diversified Education	Employed Personnel	0	0	31	0	32	0	88	0	115	0
	#Preservice Program	0	0	0	0	0	0	0	0	0	0

Source - District Master Plans, Division of Public Schools and State Plan for Vocational Education

secondary Home Economics teachers and three preservice programs are located in that region. It is emphasized that preservice productivity cannot be directed to a given region. Yet, it appears that in some instances the location of preservice programs are not optimumly located in regard to the area in which demand exists. However, before a recommendation could be made to relocate preservice programs, it could be necessary to ascertain the preferred attendance centers of potential teachers. It may be recalled that while most of the preservice programs in Business and Office Education, Home Economics Education, Industrial Education, and Industrial Arts Education are in Regions I and II, the supply as indicated by the number of applicants for each position vacancy at the local school district level is highest in Region V for these program areas.

The current location of prservice vocational and technical programs varies considerably from that which existed according to the Master Plan for Vocational and Adult Teacher Education, issued in 1971 by the Division of Vocational, Technical and Adult Education. A comparison may be made by reviewing Map 2 and Excerpts 1 and 2 (excerpted from the Master Plan for Vocational and Adult Education).

Excerpt 1:

"Present Facilities for Vocational and Adult Teacher Education - 1971"

There are presently seven state-supported teacher education institutions operating in Florida. They are:

The Florida A & M University

The Florida State University

The Florida Atlantic University

The Florida Technological University

The University of Florida

The University of South Florida

The University of West Florida

In addition, The Florida International University (Miami) and The University of North Florida (Jacksonville), designated state-supported institutions to be operational in September 1972, will also be factors in vocational and adult teacher education when they begin functioning. Four institutions have been approved by the State Board of Vocational Education to offer courses and programs to prepare and upgrade vocational education teachers in the following fields:

The Florida A & M University - Agricultural Education

Home Economics Education

Industrial Education

The Florida State University - Home Economics Education

	Industrial Education
The University of Florida	- Agricultural Education
The University of South Florida	- Business and Office Education
	Distributive Education
	Industrial Education

Excerpt 2:

"Proposed Vocational-Technical Preservice and Inservice Offerings Not Approved by the State Board for Vocational Education in 1971"

The Florida A & M University	- Technical Education
The Florida Atlantic University	- Business and Office Education
	Distributive Education
	Industrial Education
	Technical Education
The Florida Technological University	- Business and Office Education
	Distributive Education
	Industrial Education
	Technical Education
The Florida International University	- Agricultural Education
	Business and Office Education

Distributive Education

Health Occupations Education

Home Economics Education

Industrial Education

Technical Education

The University of Florida - Business and office Education

Distributive Education

Diversified Cooperative Training and Work Experience

Health Occupations Education

Home Economics Education

Technical Education

The Univeristy of South Florida - Diversified Cooperative Training and Work Experience

Health Occupations Education

Technical Education

The University of West Florida - Business and Office Education

Distributive Education

Technical Education

It may be observed that only four institutions were approved to offer vocational courses in 1971, whereas, according to the current state plan (1975-1976) there are nine regional institutions offering preservice and inservice training programs. Many of those programs in 1971 were operative without State Board approval while others indicated as being planned in 1971 had not begun at the expiration of the Baseline Data Research Project. In addition, several preservice programs not included in the 1971 Master Plan, as proposed or approved, had been installed. One program, Home Economics at the University of West Florida, did not appear in the Master Plan or in the state plan.

Supply and Demand Discrepancy

Ratios of preservice productivity to total unduplicated (full and part-time) number of personnel employed (1975-1976) are presented in Table 18. The ratios represent statewide totals and indicate that there are about 8.9 teachers produced for each 100 teachers currently employed in Industrial Arts Education, whereas less than one Health and Public Service teacher is produced for each 100 teachers currently employed. All other program areas fall within these two values. This particular index to supply and demand discrepancy indicated that teacher education institutions are not currently producing more teachers than the demand.

Table 18

RATIO OF PRESERVICE PRODUCTIVITY TO TOTAL UNDUPLICATED (FULL & PART TIME) NUMBER OF PERSONNEL EMPLOYED 1975-76

Program Area	Ratio
Agri-Business	.045
Business & Office Education	.044
Distributive Education	.051
Health & Public Service	.009
Home Economics	.036
Industrial Education	.031
Industrial Arts Education	.089

As has been stated, the major contribution to oversupply of vocational education teachers, if any exists, is the supply which results from out-of-state applicants and applicants from Business and Industry. Region V has indicated an oversupply in specific program areas, but demand is also greatest in Region V. Rather than showing an oversupply of teachers, Table 18 indicates an undersupply, particularly in regard to Health and Public Service teachers.

The ratio of statewide new demand to currently employed teachers (by program area) is presented in Table 19. The new demand ratios may be compared with the productivity ratios shown in Table 18. It may be observed that Business and Office Education and Distributive Education have higher productivity ratios than demand ratios, while all other program areas have a higher demand ratio than productivity ratio. The high demand areas appear to be those in which new programs are being added (e.g., Health and Public Service Education and Industrial Arts Education). A large difference between the demand and productivity ratios is observed for Health and Public Service Education. However, no oversupply of teachers is anticipated when the number of programs stabilizes. If the high demand for Industrial Arts Education is being created by the addition of new prevocational programs, oversupply may occur when the number of these programs stabilizes.

Table 19

STATEWIDE RATIO OF NEW DEMAND
TO CURRENTLY EMPLOYED TEACHERS

Program Area	1975-1976
Agri-Business	.056
Business and Office Education	.030
Distributive Education	.030
Health and Public Service	.105
Home Economics	.042
Industrial Education	.049
Industrial Arts Education	.089
Diversified	.049

An index to statewide supply and demand discrepancy is shown in Table 20. These data were calculated by subtracting the new demand (number of vacancies) from the new supply (teacher education productivity). As was indicated in data previously reported, the areas of Business and Office Education and Distributive Education appear to be producing more new preservice education personnel than there are vacancies. Similarly, Industrial Arts Education and Home Economics Education are producing more preservice personnel than there are vacancies. However, it may be observed that productivity exceeds vacancies for the areas of Distributive Education, Home Economics Education and Industrial Arts Education for 1975-1976 only.

It is the opinion of the researchers that when the new supply is equal to the new demand, supply and demand of vocational and technical education personnel will be fairly well balanced. This conclusion is based on the assumptions that (1) approximatley 50% of those persons applying for position vacancies are experienced personnel and (2) approximately 50% of the preservice productivity will not be available for teaching positions.

The primary factor in supply and demand discrepancy is the number of applicants which each administrator would like to review for each position vacancy. It has been assumed earlier that this number ranges between 10 and 15. Should this number decrease, total supply may far outstrip the demand for teachers. Conversely, if this number should

Table 20

STATEWIDE SUPPLY AND DEMAND DISCREPANCY

Program Area	New Supply (Teacher Education Productivity)		New Demand		Discrepancy	
	74-75	75-76	74-75	75-76	74-75	75-76
Agri-Business	48	44	62	55	-14	-11
Business and Office Education	188	180	167	87	+21	+93
Distributive Education	26	71	39	45	-13	+26
Health and Public Service	56	13	102	137	-46	-124
Home Economics	126	113	131	84	-5	+29
Industrial Education	98	118	195	181	-97	-63
Industrial Arts Education	131	106	155	92	-24	+14
Diversified	0	0	28	26	-28	-26

increase, the demand for vocational teachers would far outstrip the supply. Using the 10-15 range as an index to demand, it appears that currently supply and demand of vocational teachers are fairly well balanced.

Due to the supply and demand balance, and probable inter-regional mobility, duplication of preservice training efforts appear to be minimal. The service area radius of teacher education institutions cannot be regionalized. Therefore, more than regional data are needed to justify location or relocation of preservice training programs. While the present location of vocational and technical education preservice programs may not be optimum, it is not considered advisable to make recommendations regarding the location of preservice programs which will approach the ideal. This conclusion is based on the relative consistency of the average number of applicants per position vacancy, regardless of the distance of the geographic area from an existing preservice program.

Trend Data

In order to give an indication of future enrollment trends in vocational and technical education programs, population studies indicating population growth by age and studies projecting occupational growth in fields related to vocational and technical education have been collected and subdivided into the five geographic regions specified in the proposal.

As stated previously in this report, it is felt that two separate indices have a significant effect on the demand for vocational and technical teaching personnel. They are: (1) employer needs relating to vocational and technical fields and (2) student demands for vocational and technical education courses.

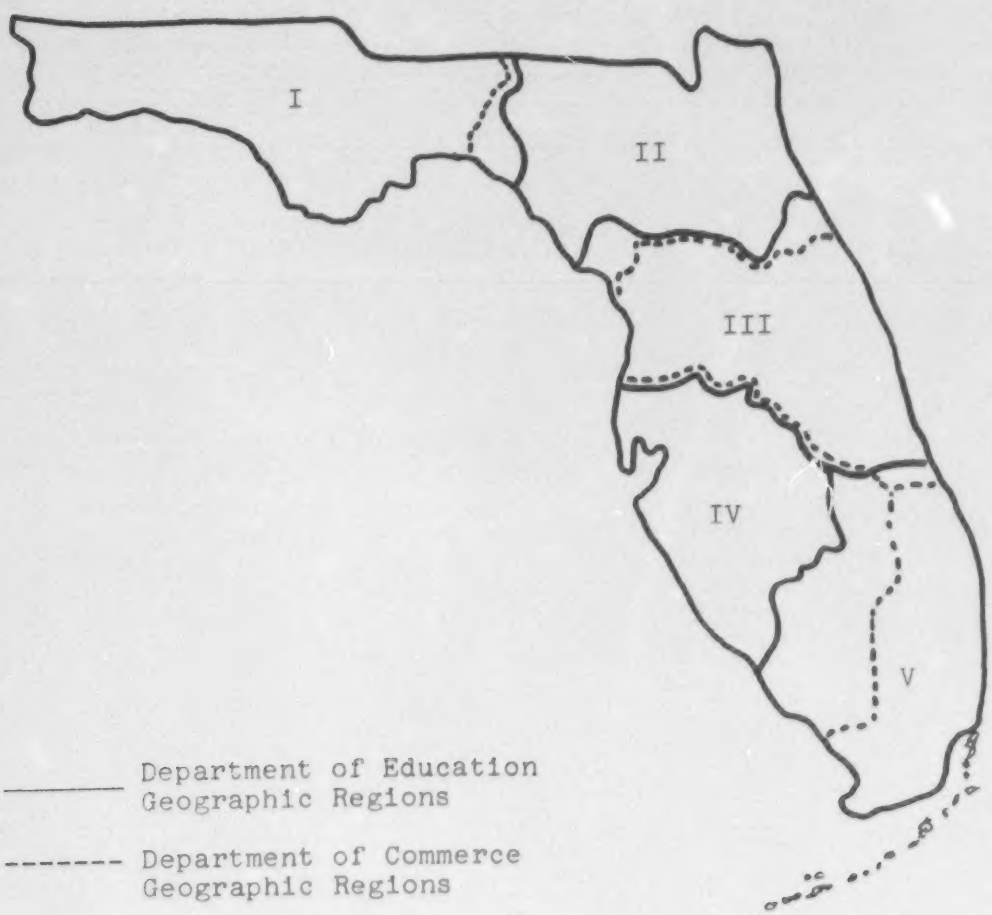
Employer needs within specific vocational and technical education fields have been examined through the use of graphical data which presented present and projected future employment by geographic region (Florida Department of Commerce, 1976). It must be emphasized that regions used in the projection of future employment differ slightly from the Department of Education regions. Discrepancies between the Department of Commerce and Department of Education regions are shown in Map 3. Student demand within specific vocational and technical education fields have been studied and are presented through the use of graphs depicting present and projecting future population by age group within the five geographic regions (University of Florida, 1974, 1975, 1976).

I. Employer Needs Related to Vocational and Technical Education Fields

The estimation of employer needs within vocational and technical education fields is based on data supplied by the State of Florida Department of Commerce. These data

Map 3.

COMPARISON OF DEPARTMENT OF EDUCATION AND DEPARTMENT OF COMMERCE PLANNING REGIONS



provide an indication of the employment by occupational title. It is assumed that specific vocational and technical education program areas prepare entry level workers for certain occupations. Based on this assumption, occupational titles which relate to specific vocational and technical education fields were categorized and compiled. It must be emphasized that the occupational titles listed in Table 21 are not, in all probability, a complete listing of occupations related to the specific vocational and technical education fields. In addition, not all personnel employed within these occupations need specific vocational and technical education training. However, the data summarized in this section will yield a general impression of future employer needs in occupations related to specific vocational and technical education program areas. A list of the program areas and related occupational titles used in the data compilation is supplied in Table 21.

Demand for instructors in vocational and technical education program areas for which Department of Commerce data were not available were evaluated solely on the basis of the second index, student demand for vocational and technical courses. Those program areas which included Industrial Arts, Work Experience, and others are not readily applicable to specific occupational titles.

Projected occupational growth relating to the six vocational and technical fields listed in Table 21 are depicted by percentage growth in each field in the five

Table 21

VOCATIONAL-TECHNICAL EDUCATION PROGRAM AREAS WITH RELATED OCCUPATIONAL TITLES

Technical & Industrial	Health	Home Economics	Business	Agri-Business	Distributive
Chem. Tech.	Regis. Nurses	Window Dressers	Programmers	Agri-Bio Tech.	Loan Managers
Deaftamen	Health Tech.	Tailors	Stenographers	Produce Buyers	Purchasing Agents
Elec. Tech.	Embalmers	Seamstress	Typists	Farm Implements	Sales Managers
Indus. Tech.	Library Att.	Sewers	Secretaries	Logging Inspec.	Restaurant Mgrs.
Mech. Tech.	Teacher Aids	Food Workers	Office Mach.	Millers	Sales Workers
Surveyors	Dental Tech.	Designers	Bookkeepers	Agri-Motormen	Bank Tellers
Science Tech.	Stat. Firemen		File Clerks	Fishermen	Billing Clerks
Photographers	Health Service		Payroll Clerks	Gardeners	Cashiers
Construc. Craft	Child Care Wks.		Receptionists	Lumbermen	Insurance Adjusters
Job & Die Setter	School Monitors		Stat. Clerks	Farm Owners	Real Estate Appraisers
Mech. & Repair	Welfare Service			Farm Managers	
Tele. Install.	Protec. Service Workers			Farm Foremen	
Tele. Lineman					
Upholsterers					
Metal Workers					
Meat Wrappers					
Insulation Wrks.					
Dry Wall Install.					
Meat Cutters					
Photo Processing					
Fork Lift Oper.					
Barbers					
Hairdressers					

Source - Florida Department of Commerce, 1976

Department of Commerce geographic districts. These graphs are listed as Graph 1 through Graph 5 throughout all five districts. Excluding Agri-Business estimates, percentage growth within vocational and technical education fields vary in a range of 40-75% growth over the ten year period from 1970-1980. Health and Public Service occupations are generally growing at the fastest pace within this grouping, with Technical and Industrial and Home Economics related occupations generally rising between 40 and 50 percent over the ten year period. In most cases these percentages exceed the rate of population growth and are fairly constant for all regions.

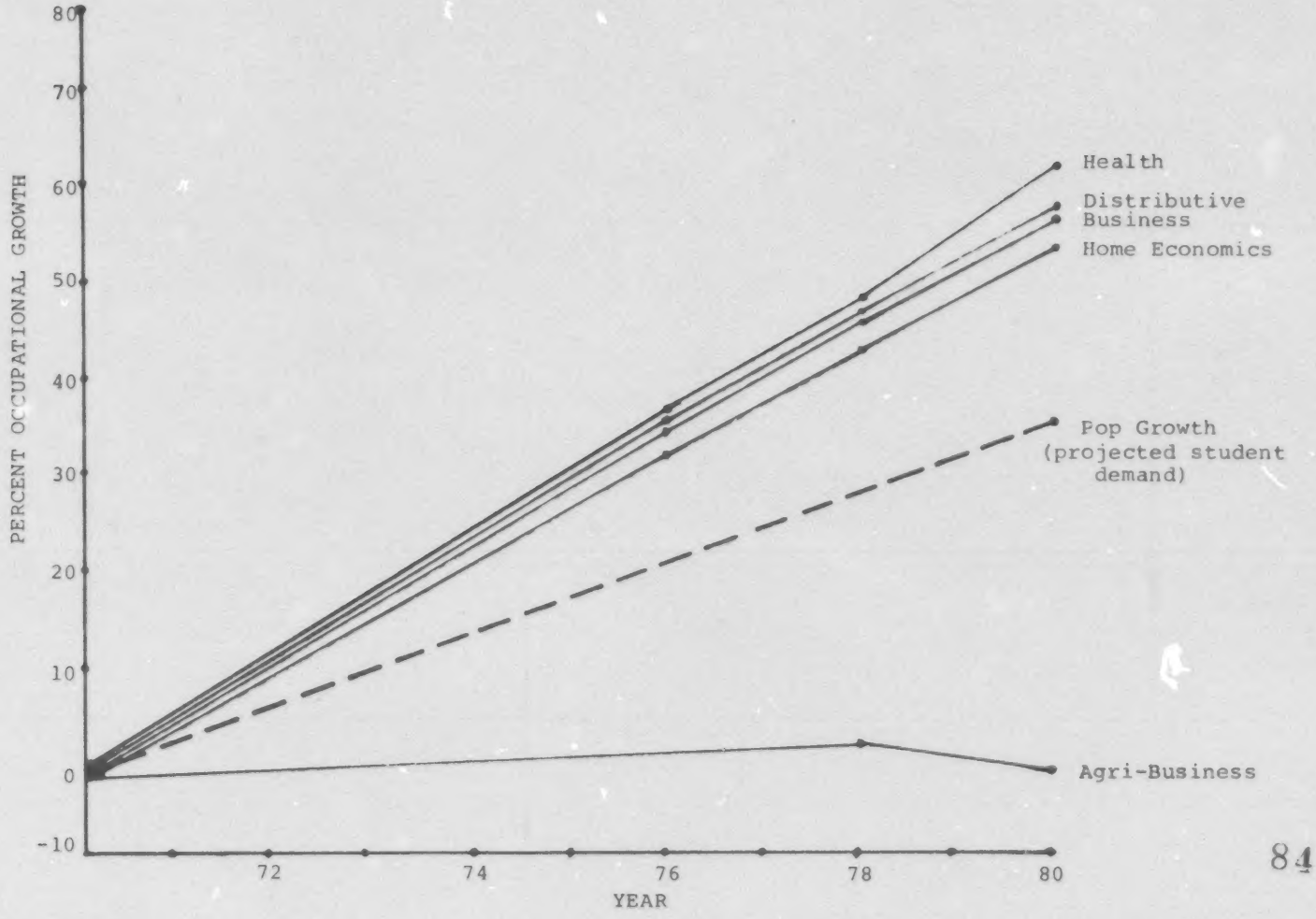
Projected occupation growth in Agri-Business occupations is virtually in a constant state with the exception of Districts II and V, where growth over the ten year period is expected to be a little over 10%. It should be noted that the Department of Commerce data does not provide information concerning most of the horticultural occupations.

II. Student Demand for Vocational and Technical Education Courses

Student demand for vocational and technical education courses have been examined through the use of graphs depicting present and predicting future population trends within the five geographic regions (Florida Department of Commerce, 1975).

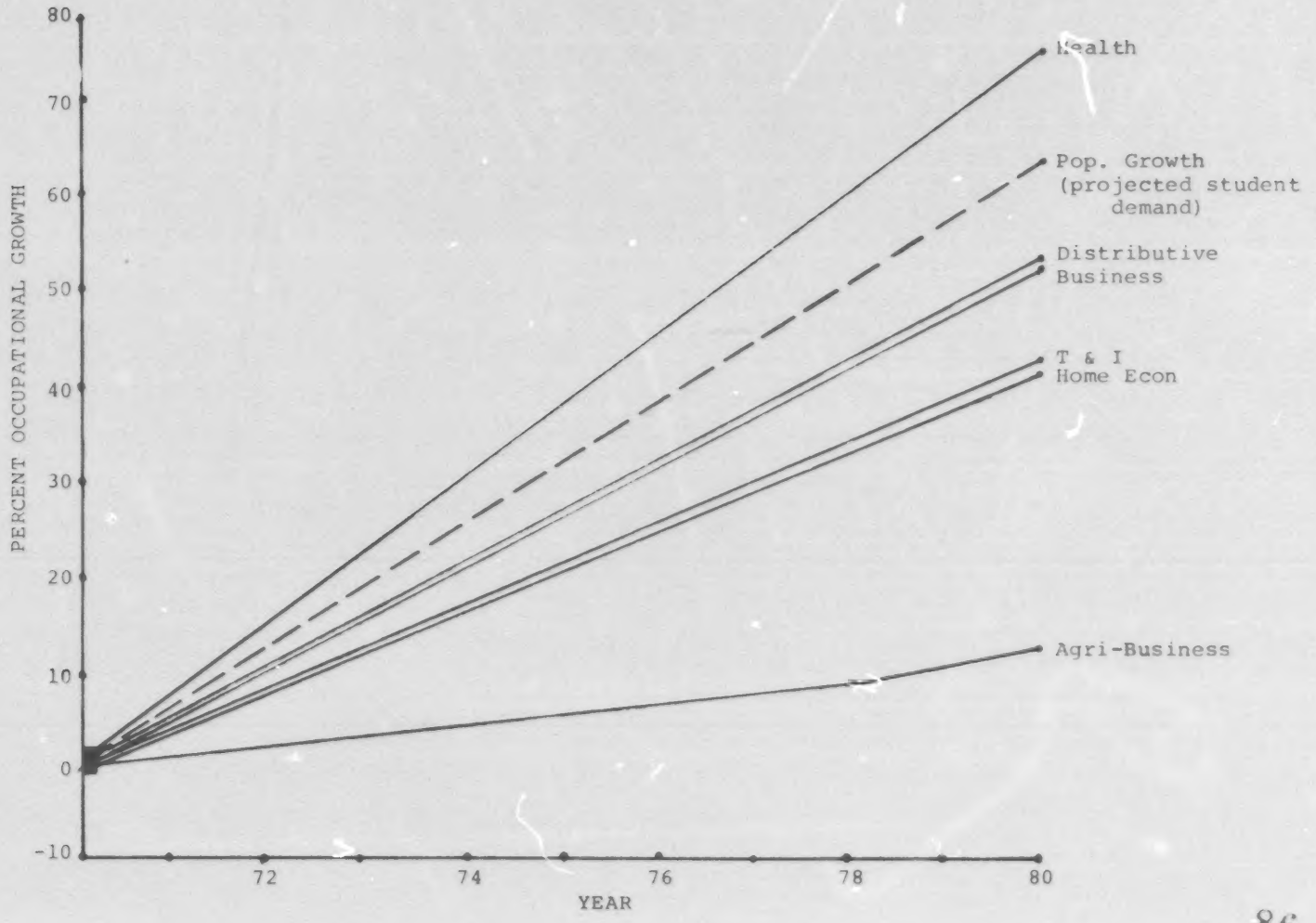
Graph 1. PROJECTED OCCUPATIONAL GROWTH RELATED TO VOCATIONAL-TECHNICAL EDUCATION FIELDS

REGION I



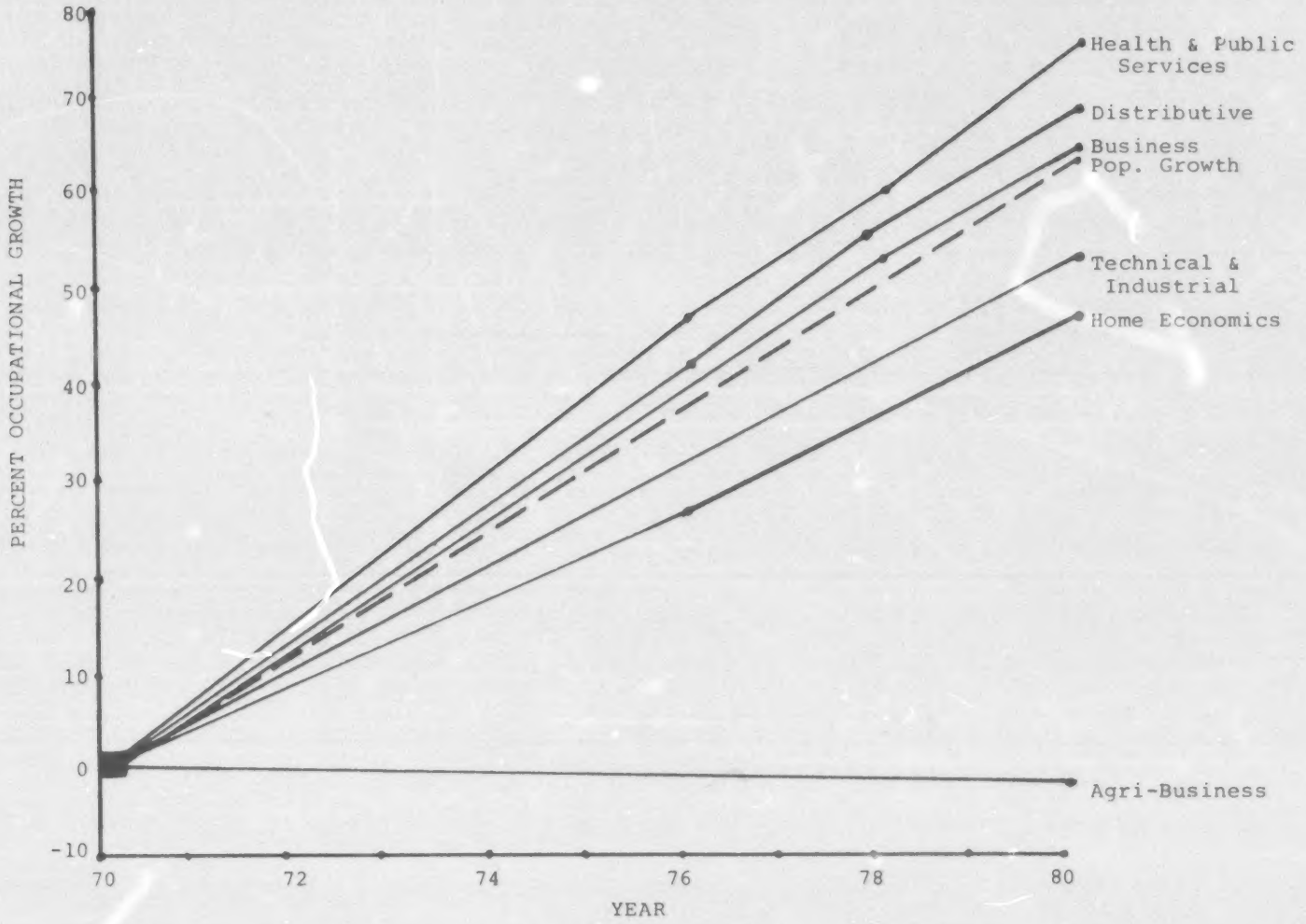
Graph 2. PROJECTED OCCUPATIONAL GROWTH RELATED TO VOCATIONAL-TECHNICAL EDUCATION FIELDS

REGION II

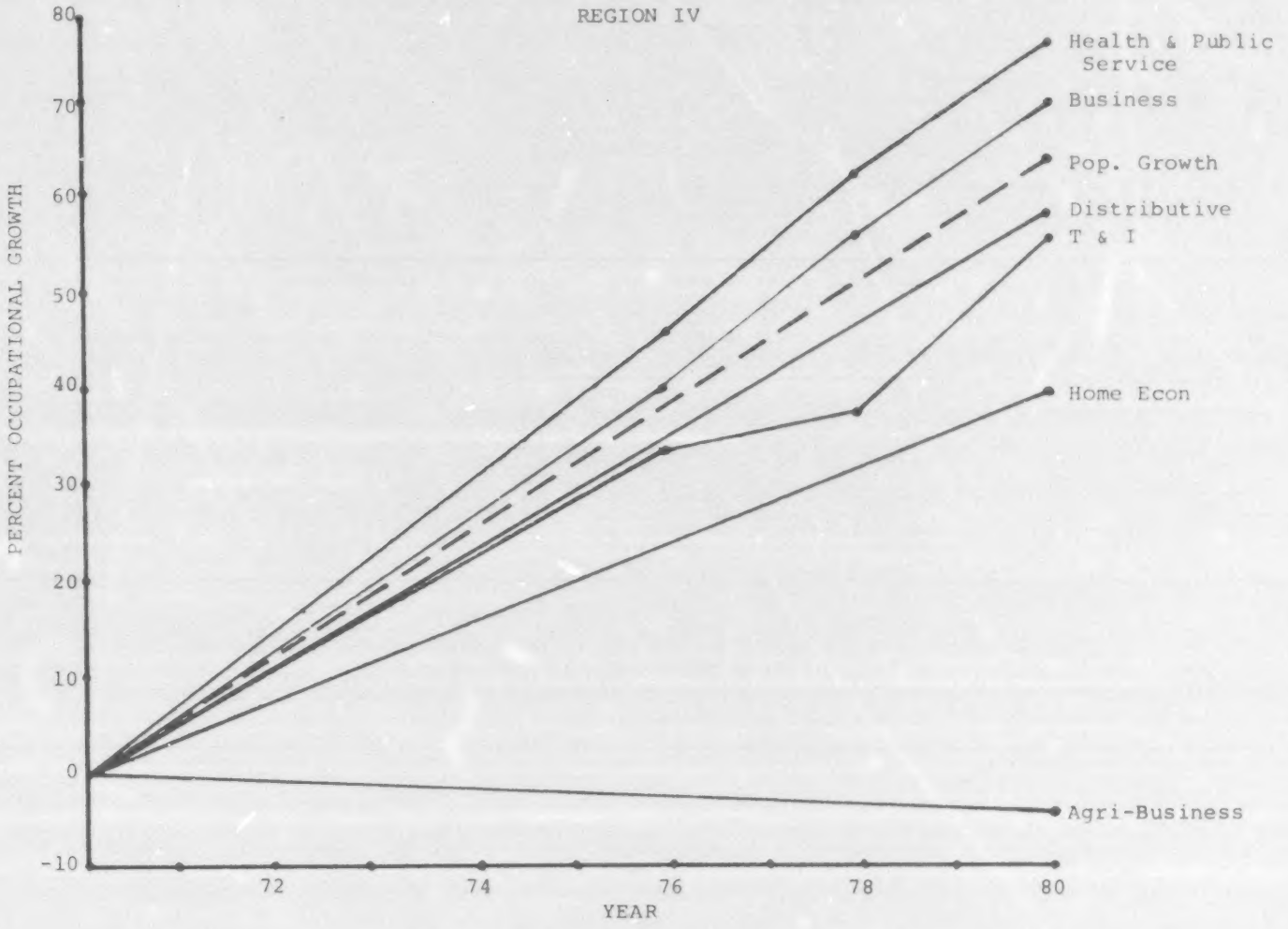


Graph 3. PROJECTED OCCUPATIONAL GROWTH RELATED TO VOCATIONAL-TECHNICAL EDUCATION FIELDS

REGION III

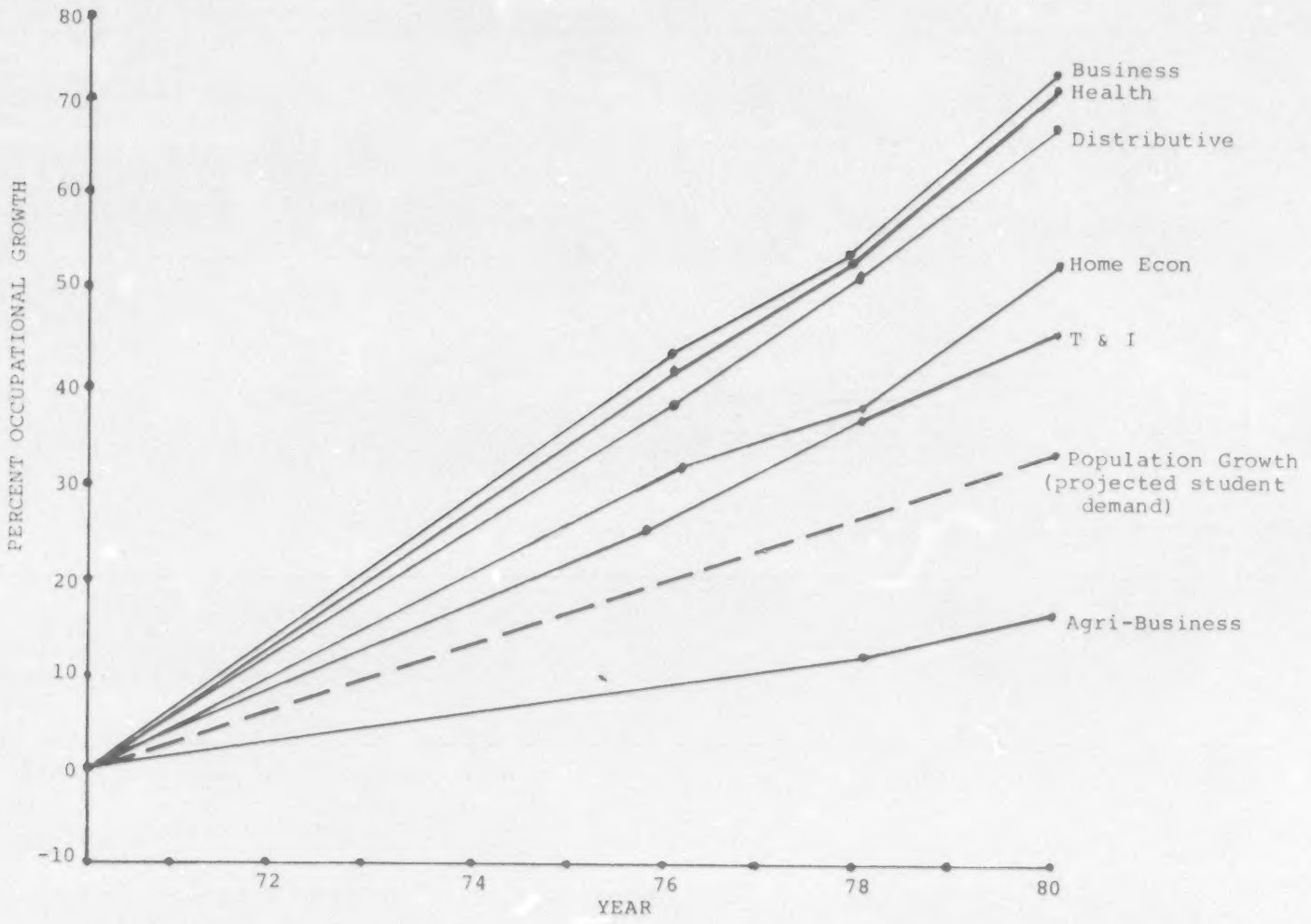


Graph 4. PROJECTED OCCUPATIONAL GROWTH RELATED TO VOCATIONAL-TECHNICAL EDUCATION FIELDS



Graph 5. PROJECTED OCCUPATIONAL GROWTH RELATED TO VOCATIONAL-TECHNICAL EDUCATION FIELDS

REGION V



Figures depicting projected population growth by age group within the five regions were constructed. Analysis of these projected figures using the Kendall Coefficient of Concordance (x^2 = 75d = .01, df = 2) indicated no significant change in population-age distribution throughout the five regions. Because of this, no further analysis by age group was considered to be necessary. Student demand for vocational and technical education courses have been estimated using figures projecting future population growth in the five regions. These projected percentages are shown in Graphs 1 through 5, which project occupational growth by program area.

Student demand for vocational and technical education courses as indexed by population growth indicate the greatest increases in Regions II, III, and IV. In these regions population growth between 1970 and 1980 will increase approximately 60% (Graphs 2 through 4). Population increases in Regions I and V indicate student demand between 1970 and 1980 to increase approximately 30% (Graphs 1 through 5).

Analysis of Trend Data

Employer needs related to vocational and technical education fields within the five regions are also shown in Graphs 1 through 5. Throughout the five regions, occupational growth in the field of Health and Public Service

is exceptionally high. Health and Public Service occupations is the only program area in which the percentage of occupational growth outstrips the percentage of population growth in the five regions. Assuming that current student demand is equal to employer needs within this program area, need for Health and Public Service employees will far outstrip student demand for courses in the near future.

Within Regions I and V occupational growth in every program area (with the exception of Agri-Business) exceeds projected student demand (Graphs 1 and 5). This would indicate that in Regions I and V courses in Health, Distributive, Business, Home Economics, and Technical and Industrial Education may be insufficient to support occupational growth within these regions.

Occupation growth and its relationships to student demand in Regions II, III, and IV can best be understood using graphical data (Graphs 2 through 4). Within these regions, program areas for which projected occupational growth exceeds population growth may be insufficient in future years in supplying an adequate number of personnel within their respective fields. Program areas where population growth exceeds occupational growth may well be over-productive programs, producing more skilled graduates than there are jobs available.

Projected occupational growth in the Agri-Business field is less than projected population growth in all five regions. This, at an initial glance, seems to indicate that Agri-Business training will far outstrip employer need. However, Agri-Business programs are drastically changing and a closer look within segments of the Agri-Business field is appropriate. This will be provided in the following section.

Trends in Agri-Business

Occupational trends in Agri-Business (projected in the graphs shown previously) indicate little or no growth in Agri-Business occupations. However, the data available from the Department of Commerce includes information about the segments of agriculture that have traditionally been decreasing due to changes in methods of agricultural production (e.g., farm workers). The Department of Commerce data also excludes many of the occupations that are included by agricultural educators. Thus, it was considered desirable to take an in-depth looke at the occupational trends in the area of Agri-Business and Natural Resources. It was felt that such an in-depth look would provide data necessary to make recommendations concerning the changes that should be made in the preparation of teachers for this field.

In order to provide information regarding occupational trends in Agri-Business and Natural Resources, studies indicating the percentage of occupational growth in the occupations that the Department of Commerce typically classify as being agricultural (Florida Department of Commerce, 1976) and studies depicting percentage of growth in the various segments of the Agri-Business and Natural Resources field were reviewed (Florida State Department of Education, 1973).

Data gleaned from the Florida Department of Education (1973) study of occupational trends in Agri-Business and Natural Resources are presented in Table 22. These data show a considerable amount of fluctuation for the estimates of percentage of change from 1969 to 1972 as compared to the percentage of change from 1969 to 1975. Fluctuations of this size could have been due to actual changes in the industry or to low reliability in the method of data collection employed by the research team responsible for this report. Evidence of fluctuation between the estimates is obvious throughout the tables presenting these data. As an example, in the Agri-Business products segment within Region II, manpower demand between 1969 and 1972 increased 23.3%. However, between 1969 and 1975 the products segment in Region II indicated that manpower demand will decline by 11.4%. In general, the report indicated that manpower demand in the segments

Table 22

PERCENTAGE CHANGE IN MANPOWER DEMAND FOR SEVEN SEGMENTS OF AGRICULTURE IN THE FIVE PLANNING REGIONS, 1969-1975

(Florida Department of Education, 1973)

SEGMENT	REGION I		REGION II		REGION III		REGION IV		REVION V	
	69-72	69-75	69-72	69-75	69-72	69-75	69-72	69-75	69-72	69-75
Mechanics	436.5	590.6	8.6	35.5	3.8	31.6	11.6	39.6	11.8	36.3
Rank		(1)		(2)		(5)		(2)		(2)
Horticulture	15.8	71.7	9.4	49.4	50.9	61.6	19.6	50.1	10.6	37.1
Rank		(2)		(1)		(3)		(1)		(5)
Supplies/Services	3.0	17.7	-3.0	4.2	17.0	47.2	8.9	24.6	16.6	32.1
Rank		(3)		(5)		(4)		(5)		(3)
Products	4.2	13.0	23.3	-11.4	22.2	20.5	12.5	33.7	6.5	14.0
Rank		(4)		(7)		(6)		(3)		(7)
Production	5.3	6.4	-1.0	6.6	-1.4	-9.5	5.8	-76.5	16.0	17.3
Rank		(5)		(4)		(7)		(7)		(6)
Forestry	3.8	1.0	5.1	12.8	91.0	124.2	5.3	25.0	15.3	30.5
Rank		(6)		(3)		(1)		(4)		(4)
Resources	-	-	-	-	16.7	122.9	-8.2	22.8	10.6	37.1
Rank		(7)		(6)		(2)		(6)		(1)
All Agriculture	3.4	11.7	8.9	7.8	17.0	25.0	11.8	30.7	12.2	19.7

Within each region segments are ranked from greatest positive to greatest negative percentage change, 1969-1975.

of mechanics, horticulture, supplies/services, and products are increasing throughout all regions at a high rate when compared with the remaining three segments (production, forestry, and resources). As shown in Table 22, the change in percentage of manpower demand for mechanics by region is 590.6, 35.5, 31.6, 39.6, and 36.3 percent respectively for Regions I through V. Likewise, large increases are also present in the fields of horticulture, supplies/services, and products. Increases between Regions I and V in these areas have the following ranges: horticulture 37.1 to 71.1%; supplies/services 17.0 to 47.2%; and products 13.0 to 33.7%. Conversely, the segments of production, forestry, and resources reveal both decreases and increases in the various regions. Thus, regional planning will be necessary for these occupational areas.

The occupational growth data provided by the Department of Commerce, when broken down to the various occupations, provided support for the Department of Education data for those occupations which were overlapping. These data are displayed by the five Department of Commerce Regions in Table 23. In this estimate, the occupational categories of farm buyers, farm implements, gardeners, and agri-technicians show high rates of employment growth from 1970 to 1980 in every planning region. Occupational categories that show the least increase are of a non-technical nature, i.e., logging inspector, fisherman,

Table 23

PERCENTAGE OF CHANGE IN OCCUPATIONAL GROWTH FOR NINE OCCUPATIONAL CATEGORIES OF AGRICULTURE IN THE FIVE PLANNING REGIONS (1970-1980)

(Florida Department of Commerce, 1976)

OCCUPATIONAL CATEGORY	REGION I		REGION II		REGION III		REGION IV		REGION V	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Farm Buyers	25.0	3	76.4	2	29.6	5	21.3	4	33.3	3
Farm Implements	42.8	2	48.5	4	79.6	1	85.1	1	58.6	2
Logging Inspector	-18.2	9	-9.8	7	33.3	4	-	-	25.0	5
Fisherman	-1.6	6	-10.3	8	-11.0	8	-14.7	7	-11.7	8
Gardeners	19.0	4	19.1	5	42.7	3	30.9	3	28.8	4
Lumbermen	-8.9	7	60.5	3	9.7	6	2.5	5	10.6	6
Farm Workers	-15.1	8	-17.5	9	-23.4	9	-20.0	8	-16.1	9
Farm Foremen	17.6	5	8.3	6	-1.0	7	-0.4	6	1.2	7
Agri-Technician	77.1	1	81.1	1	70.0	2	50.4	2	86.6	1
All Agriculture	-0.5		12.1		-3.4		-4.2		14.5	

Within each region, occupations are ranked from greatest positive to greatest negative percent change, 1970-1980.

lumberman, farm worker, and farm foreman. Table 23 illustrates that within Regions I through V the percentage of change in occupational growth for farm buyers, farm implements, and agri-technicians range from 21.3 to 76.4%, 42.8 to 85.1% and 50.4 to 86.6% respectively. All other occupational categories exhibit either decreases or small increases in percent of occupational growth over the ten year period.

From the information presented, it appears that the direction of Agri-Business Education in the future should move quickly toward more technical applications of agricultural services and management. Implementing more technical and less general Agri-Business programs will aid in providing qualified personnel in the fields showing the greatest future demand. These programs should reflect the present change in Agri-Business services needed (as reflected by the shift in manpower demands of the agricultural industry). In order to facilitate this change, preservice teacher educators should direct currently enrolled students toward preparation for the changing field of agriculture or recruit students who have interests in these occupational areas.

Inservice Education

As noted in the Specific Objectives, this study sought to determine the availability of inservice education

delivered by the local education agencies and universities for vocational and technical educational personnel in the various program areas, levels, and geographic regions. In addition, the nature of the inservice activity (technical or professional), locations, types of vocational and technical education personnel served, and training personnel who conducted the inservice activity were obtained. Data needed to meet the specific objectives were obtained from (1) the district comprehensive plans, (2) the local district questionnaire (Items 11 and 12), and (3) records of funded projects in the Staff Development Section of the Division of Vocational Education. The results of the analyses of these data are reported in this seciton.

I. District Comprehensive Plans

The inservice activities planned by the districts were gleaned from all sixty-seven local district master plans. Tables 24 through 28 provide the total FTE personnel involved in inservice activities, the source of funding, the number of inservice programs, and the range of credit offered by region and by program area.

It should be noted at the outset that most inservice programs planned by the district were considered to be appropriate for many of the service areas of vocational education. Thus the inservice programs are duplicated, e.g., an inservice program could be considered to be

Table 24

AVAILABLE FUNDING AND NUMBER OF INSERVICE PROGRAMS

BY FIVE PLANNING REGIONS (State Department of Education)

1974 - 1975

REGION I

	Total Number FTE Personnel	No Funding, Total	Local Funding, Total	State Funding, Total	Federal Funding, Total	Total Number of Programs	Range of Credit
Administration	26.3	18	33	40	0	80	2 - 60
Guidance and Counselling	5	16	21	27	0	66	2 - 67
Agri-Business & Natural Resources	129	14	19	33	0	66	2 - 60
Business & Office Education	297.1	22	23	34	0	78	2 - 60
Distributive Education	128	20	20	35	0	75	2 - 60
Health & Public Service Education	131	16	29	42	0	100	2 - 61
Home Economics Education	210.2	20	26	37	1	84	2 - 60
Industrial Education	440	6	18	34	0	71	2 - 60
Diversified Education	115	18	17	33	0	68	2 - 60
Work Experience	47	0	17	20	0	63	2 - 60
Technical Education	94.9	1	4	41	0	69	2 - 60

Available to All Teachers 903

Available Only to Vocational Technical Personnel 253

Table 25

AVAILABLE FUNDING AND NUMBER OF INSERVICE PROGRAMS

BY FIVE PLANNING REGIONS (State Department of Education)

1974 - 1975

REGION II

	Total Number FTE Personnel	No Funding, Total	Local Funding, Total	State Funding, Total	Federal Funding, Total	Total Number of Programs	Range of Credit
Administration	48	9	41	2	7	57	1 -200
Guidance and Counselling	29	47	27	1	7	82	1 - 63
Agri-Business & Natural Resources	172	35	38	0	2	65	1 - 60
Business & Office Education	482	33	40	0	2	75	1 -120
Distributive Education	149	33	33	0	1	67	1 -120
Health & Public Service Education	138	11	43	2	3	101	1 -120
Home Economics Education	554	36	40	0	3	79	1 -120
Industrial Education	471	13	59	0	3	75	1 -120
Industrial Arts Education	179	36	31	0	3	70	1 -120
Diversified Education	31	32	32	0	1	65	1 -120
Work Experience	50	28	33	0	2	63	1 -120
Technical Education	131	16	60	0	5	81	1 -120

Available to All Teachers 775

Available Only to Vocational Technical Personnel 173

Table 26

AVAILABLE FUNDING AND NUMBER OF INSERVICE PROGRAMS

BY FIVE PLANNING REGIONS (State Department of Education)

1974 - 1975

REGION III

	Total Number FTE Personnel	No Funding, Total	Local Funding, Total	State Funding, Total	Federal Funding, Total	Total Number of Programs	Range of Credit
Administration	42	13	1	17	0	38	1 - 60
Guidance and Counselling	4	18	0	28	0	50	1 - 60
Agri-Business & Natural Resources	179	28	2	18	1	47	1 -504
Business & Office Education	359	24	9	17	0	5	1 -534
Distributive Education	358	18	6	15	1	41	1 -469
Health & Public Service Education	174	19	6	26	1	58P* 1T**	1 -252
Home Economics Education	342	14	7	19	1	49	1 -528
Industrial Education	093.5	18	1	16	1	41P 1T	1 -528
Industrial Arts Education	174	20	1	15	1	41P 1T	1 -528
Diversified Education	32	14	5	15	1	35	1 -528
Work Experience	82	19	1	14	1	3	1 -528
Technical Education	171	14	1	10	1	26	1 -528

Available to All Teachers 951

Available Only to Vocational Technical Personnel 190

*Professionally Oriented
**Technically Oriented

Table 27

AVAILABLE FUNDING AND NUMBER OF INSERVICE PROGRAMS

BY FIVE PLANNING REGIONS (State Department of Education)

1974 - 1975

REGION IV

	Total Number FTE Personnel	No Funding, Total	Local Funding, Total	State Funding, Total	Federal Funding, Total	Total Number of Programs	Range of Credit
Administration	36.8	3	10	0	0	47	1 -120
Guidance and Counselling	13	2	43	4	0	69	1 - 30
Agri-Business & Natural Resources	267.2	10	16	0	1	27	1 - 67
Business & Office Education	839.6	10	41	1	1	50 17*	1 -240
Distributive Education	369.6	8	55	2	1	72	1 - 60
Health & Public Service Education	373.7	10	49	2	3	62	1 -120
Home Economics Education	417.4	13	48	3	1	61	1 -120
Industrial Education	773.1	9	16	3	1	24	1 -120
Industrial Arts Education	280	9	35	3	1	50	1 - 60
Diversified Education	235	7	67	2	1	£1 17	1 - 60
Work Experience	179	15	10	3	1	13	1 - 60
Technical Education	430.9	7	43	0	1	49	1 - 20

Available to All Teachers 679

Available Only to Vocational Technical Personnel 107

*Technically Oriented

Table 28

AVAILABLE FUNDING AND NUMBER OF INSERVICE PROGRAMS

BY FIVE PLANNING REGIONS (State Department of Education)

1974 - 1975

REGION V

	Total Number FTE Personnel	No Funding, Total	Local Funding, Total	State Funding, Total	Federal Funding, Total	Total Number of Programs	Range of Credit
Administration	56	36	2	5	1	58	1 - 60
Guidance and Counselling	19	20	13	1	0	34	2 - 60
Agri-Business & Natural Resources	235	21	32	4	2	58 / 1T*	2 - 67
Business & Office Education	896	17	34	3	2	52	2 - 67
Distributive Education	475	17	32	1	2	52	2 - 67
Health & Public Service Education	483	38	40	4	4	85 / 1T	2 - 67
Home Economics Education	957	24	34	2	3	63	2 - 67
Industrial Education	1259	23	39	1	4	66 / 1T	2 - 67
Industrial Arts Education	461	21	39	1	4	65	2 - 67
Diversified Education	115	17	33	2	3	55	2 - 67
Work Experience	240	28	21	0	3	52	2 - 60
Technical Education	32	19	35	1	2	57	1 - 67

Available to All Teachers 650

Available Only to Vocational Technical Personnel 111

*Technically Oriented

appropraite for all teachers of vocational education while another might be considered to be appropraite for only one program area.

An unduplicated count of inservice activities for all teaching staff as well as vocational teachers is provided in Tables 24 through 28. It may be observed that as the total number of FTE vocational personnel in various regions increases the total number of inservice activities decreases. While an increase in the length of the inservice activities (inservice credit) could have explained this decline in numbers, the range of credit given for the inservice activities was fairly constant for all regions except Region III. In Region III a single district offered variable credit for inservice activities that ranged far above all other districts. It appears that the more populous regions have fewer inservice activities. One possible reason is that in the more populous districts union contracts are more likely to include pay for attending inservice activities.

Very little difference in the number of inservice programs offered for the various program areas was observed within regions. For example, in Region I the total number of programs ranged from a low of 63 for Work Experience teachers to a high of 100 for Health and Public Service instructors. In addition, the number of inservice

activities offered in the various regions had little, if any, relationship to the total FTE personnel in the region. For example, in Region II 75 inservice activities were offered for 482 FTE personnel in Business Education, while 81 were offered for 131 FTE technical education personnel.

Funding sources for the inservice activities provided by local districts were listed as being from federal, state, local, or none. Many inservice programs were listed as being funded from multiple sources. Only a limited number of inservice activities were reported as being funded from federal sources, with predominance of those reported being in Regions II and V. With the exception of Region I, most inservice programs for a given region were reported as being supported from either state or local funds. Regions II, IV, and V reported very few state funded inservice activities, while Region III reported very few that were locally funded. Inservice activities in Region I were supported about equally by local and state funds.

As shown in Tables 24 through 28, there were very few inservice activities included in the 67 district comprehensive plans that could be classified as being technical in nature. A total of eight programs in the state were classified by the researchers as being of a technical nature.

It was concluded from the data gleaned from the local district master plans that (a) inservice programs are not distributed in proportion to vocational teaching personnel, (b) most inservice activities are of a professional rather than a technical nature, (c) most inservice activities were offered for more than one vocational service area, and (d) state funds are not equally distributed throughout the state (difference in the method of reporting could have been involved here).

II. Local District Data

Data concerning inservice training programs obtained from the questionnaires received from the local educational agencies were summarized and are reported in this section. These data included numbers of personnel involved in conducting inservice programs and the sources and qualifications of inservice training personnel.

As shown in Table 29, the number of personnel per responding educational agency, involved in conducting inservice training programs, was highest in Regions I and IV for local school district programs and in Region V for community colleges. For the local school district prorams the number of personnel per responding agency involved in preservice education in Region I was approximately double that of Regions II, III, and V. To some extent these data validate the findings of the data

Table 29

NUMBER OF PERSONNEL CONDUCTING INSERVICE TRAINING PROGRAMS IN THE FIVE PLANNING REGIONS, 1975-1976

LEVELS	REGION I	REGION II	REGION III	REGION IV	REGION V
Local School Districts:					
Average Number per Educational Agency Responding	12.1	5.2	5.9	8.4	6.1
Total Number of Personnel	255	73	71	84	49
Community Colleges:					
Average Number per Educational Agency Responding	1.2	1.6	2.0	2.6	5.5
Total Number of Personnel	6	8	10	16	22

Source - Local District Questionnaire

gleaned from the local district master plan, i.e., regions with less population tend to have greater opportunities for inservice activities.

Local district personnel were asked to indicate whether inservice training personnel were recruited from (1) universities, (2) business and industry, (3) local school personnel, (4) school personnel from other districts, and (5) others. The frequency and percentage of respondents who checked each of these sources of inservice personnel are reported for local school district and community college programs in Table 30. It should be noted that the respondents were asked to check all sources that were appropriate. The percentages reported are representative of the total number of respondents. It may be observed that the primary sources of inservice training personnel for local school districts were universities and local school personnel. With the exception of Region II, 50% or more of the respondents reported using universities as a source of inservice training personnel. Local school personnel were reported as a source of inservice training personnel by 50% or more of the respondents, with the exception of Region I. Business and Industry was indicated as a source of inservice personnel, but ranked third as a source of inservice personnel when the total of all regions was considered.

Data from community colleges appeared to fall in patterns similar to that of local districts, but not all

Table 30

SOURCES OF INSERVICE TRAINING PERSONNEL

1975 - 1976

	SOURCES OF PERSONNEL	REGION I	REGION II	REGION III	REGION IV	REGION V	STATE TOTAL
LOCAL SCHOOL DISTRICTS	Universities:						
	No. using this source	15	5	8	8	4	40
	% using this source	71%	35%	66%	80%	50%	62%
	Business and Industry:						
	No. using this source	6	2	7	5	4	24
	% using this source	28%	14%	58%	50%	50%	37%
	Local School Personnel:						
	No. using this source	10	10	11	7	4	42
	% using this source	47%	71%	91%	70%	50%	65%
	School Personnel from Other Districts:						
	No. using this source	6	4	3	5	3	21
	% using this source	28%	28%	25%	50%	37%	32%
	Other:						
	No. using this source	7	0	4	3	0	14
	% using this source	33%	0%	33%	33%	0%	22%
	Total No. of Respondents	21	14	12	10	8	65
COMMUNITY COLLEGES	Universities:						
	No. using this source	1	2	2	3	2	10
	% using this source	16%	50%	40%	50%	50%	40%
	Business and Industry:						
	No. using this source	1	2	4	0	1	8
	% using this source	16%	50%	80%	0%	25%	32%
	Local School Personnel:						
	No. using this source	1	3	2	1	1	8
	% using this source	16%	75%	40%	16%	25%	32%
	School Personnel from Other Districts:						
	No. using this source	1	0	2	0	2	5
	% using this source	16%	0%	40%	0%	50%	20%
	Other:						
	No. using this source	0	0	0	0	2	2
	% using this source	0%	0%	0%	0%	50%	8%
	Total No. of Respondents	6	4	5	6	4	25

Source - Local District Questionnaire

of the community colleges reported having inservice activities. Since each region holds relatively few community colleges, only the total seemed meaningful. When the total was considered it was observed that universities, business and industry and local school personnel were the major sources of inservice training personnel. None of the sources was reported as being used by 50% of the total respondent group.

In an attempt to determine the extent to which each of the sources of inservice training personnel was utilized, the respondents were asked to check the range of percentage that best described the area from which inservice training personnel were recruited. As can be observed in Tables 31 and 32, the most often used response to this query was "no response." One meaningful trend observed for local districts was that the less populated areas utilized the university personnel to a greater extent. Respondents in Region V reported utilizing a higher percentage of business and industry personnel with previous work experience than did the respondents in other regions. Responses from community colleges were too sparse to interpret.

III. Funded Inservice Activities

The Division of Vocational Education contracted for staff development activities at the district and community college level. As shown in Table 33, all funded activities were contracted by community colleges and highly populated

Table 31

SOURCE OF INSERVICE PERSONNEL
LOCAL SCHOOL DISTRICTS

	75%		25%-75%		25%		None		Non-Resp.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Business & Industry with Previous Work Experience:										
Region I	0	0	2	9	0	0	4	19	15	71
Region II	1	7	2	14	2	14	1	7	9	60
Region III	1	7	3	21	1	7	2	14	7	49
Region IV	0	0	2	20	2	20	1	10	5	50
Region V	2	25	3	37	2	25	0	0	1	12
Business & Industry Presently Working:										
Region I	0	0	2	9	2	9	3	14	14	67
Region II	0	0	1	7	2	14	1	7	10	71
Region III	1	8	2	15	2	16	0	0	7	58
Region IV	0	0	2	20	3	30	1	10	4	40
Region V	1	12	3	37	1	12	0	0	3	37
Local School Personnel:										
Region I	3	14	3	14	3	14	2	10	11	50
Region II	4	29	6	48	1	8	0	0	2	16
Region III	3	25	3	25	3	25	0	0	3	25
Region IV	3	30	4	40	1	10	0	0	2	20
Region V	1	12	3	37	1	12	1	12	1	12
District School Personnel:										
Region I	1	5	2	11	3	16	3	16	9	50
Region II	1	7	2	14	1	7	1	7	9	64
Region III	0	0	2	15	0	0	4	30	7	54
Region IV	0	0	2	20	2	20	2	20	4	40
Region V	0	0	2	28	2	28	1	14	2	28
Universities:										
Region I	5	24	5	24	4	19	3	14	4	19
Region II	3	21	2	14	3	21	1	7	5	36
Region III	1	8	2	16	5	42	2	17	5	42
Region IV	0	0	6	60	2	20	0	0	2	20
Region V	0	0	2	25	1	12	1	12	4	50

Source - Local District Questionnaire

Table 32

SOURCE OF INSERVICE PERSONNEL

COMMUNITY COLLEGES

	75%		24%-75%		25%		None		Non-Resp.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Business and Industry with Previous Work Experience:										
Region I	0	0	0	0	0	0	1	17	5	73
Region II	0	0	0	0	0	0	1	33	2	67
Region III	1	16	1	16	1	16	1	16	2	32
Region IV	0	0	1	16	0	0	0	0	5	84
Region V	0	0	0	0	0	0	1	25	3	75
Business & Industry Presently Working:										
Region I	0	0	0	0	0	0	1	17	5	73
Region II	1	33	0	0	0	0	1	33	1	33
Region III	2	32	0	0	1	16	0	0	3	48
Region IV	0	0	1	16	0	0	0	0	5	84
Region V	0	0	0	0	0	0	1	25	3	75
Local School Personnel:										
Region I	2	32	0	0	0	0	0	0	4	68
Region II	1	20	1	20	1	20	0	0	2	40
Region III	1	11	0	0	3	33	2	22	3	33
Region IV	1	16	0	0	0	0	0	0	5	84
Region V	2	50	0	0	0	0	0	0	2	50
District School Personnel:										
Region I	0	0	0	0	0	0	1	16	5	84
Region II	0	0	0	0	0	0	2	67	1	33
Region III	0	0	1	20	2	40	0	0	2	40
Region IV	0	0	0	0	0	0	1	16	5	84
Region V	0	0	0	0	1	25	0	0	3	75
Universities:										
Region I	0	0	0	0	0	0	1	20	4	80
Region II	0	0	1	20	0	0	1	20	3	60
Region III	1	16	0	0	1	16	1	16	3	52
Region IV	3	50	0	0	1	16	0	0	2	33
Region V	0	0	0	0	1	25	0	0	3	75

Source - Local District Questionnaire

Table 33

INSERVICE ACTIVITIES FUNDED THROUGH VOCATIONAL EDUCATION

		Total Amount	Vocational Area	Dates	Institution Type
Region I					
Programs	1) 1	1) $4400	1) Business & Office	7/21-25/75	1) Community College
	2) 1	2) $6250	2) Health & Public Service	6/23-27/75	2) Community College
Credits - No info.					
Prof/Tech - 2 Tech.					
Funding - No info.					
Region II					
Programs	1) 1	1) $4400	1) Business & Office	7/21-25/75	1) Community College
	2) 1	2) $7000	2) General	4/10-6/30	2) Community College
Credits - No info.					
Prof/Tech - 2 Tech.					
Funding - No info.					
Region III					
Programs	1) 1	1) $4400	1) Business & Office	7/21-25/75	1) Community College
Credits - No info.					
Prof/Tech - 1 Tech.					
Funding - No info.					
Region IV					
Programs	1) 6	$5000-$26,650	1) 1 Agri-Business	3-June	1) 2-Community College
	2) 3		2) 1 Business & Office	2-July	2) 3-Local School District
Credits - No info.					
Prof/Tech - 1 Tech.			3) 3 Diversified		
4 Prof.					
Funding - No info.					
(*2 Programs cancelled)					
Region V					
Programs	1) 1	1) $6991	1) General	7/21-25/75	1) Community College
	2) 1	2) $4400	2) Business & Office	4/5 - 6/75	2) Local School District

Source - Bureau of Program Planning and Staff Development, Division of Vocational Education

local districts, the number of programs being six and eight, respectively. Two contracts with a local district were cancelled, leaving a total of twelve activities which were conducted. These inservice activities were held for instructors in program areas as follows:

Program Area	Number of Activities
Business and Office	5
Diversified Occupations	3
Health and Public Service	1
Vocational Education (general)	1
Agri-Business and Natural Resources	1
Administration	1

Community colleges involved in conducting these programs were fairly evenly distributed throughout the state. However, the local districts were located in Regions IV and V. A higher percentage (25%) of these funded workshops were of a technical nature than observed for the inservice activities listed in the local district comprehensive plans.

The qualifications of the personnel who conducted the inservice activities in the local districts and community colleges are presented in Tables 34 and 35, respectively. A majority of the local districts responding have utilized inservice personnel for each program area with work experience, teaching experiences, and who hold a master's degree. Relatively few of the respondents reported using inservice training personnel who held the doctorate degree.

At the community college level the number of responses

Table 34

QUALIFICATIONS OF INSERVICE TRAINING PERSONNEL

LOCAL SCHOOL DISTRICTS 1975-1976

	Experience				Degrees						
	Work		Teaching		BS		MS		Doctorate		No
	No.	%	No.	%	No.	%	No.	%	No.	%	Response
Agri-Business											
Region I	6	60	7	70	5	50	8	80	3	30	11
Region II	5	71	6	86	2	29	7	100	0	0	7
Region III	6	67	8	89	4	44	7	78	1	11	3
Region IV	2	40	4	80	3	60	4	80	1	20	5
Region V	2	50	3	75	3	75	3	75	0	0	4
Business Education											
Region I	5	50	6	60	3	30	6	60	1	1	11
Region II	6	67	5	56	2	22	5	56	1	11	5
Region III	6	75	7	87	2	25	7	87	1	12	4
Region IV	4	57	5	71	3	43	5	71	2	29	3
Region V	4	57	4	57	3	43	5	71	0	0	1
Distributive Education											
Region I	3	50	3	50	3	50	6	100	1	17	15
Region II	1	33	1	33	0	0	3	100	0	0	11
Region III	6	86	6	86	2	29	5	71	1	14	5
Region IV	2	50	3	75	2	50	3	75	1	25	6
Region V	3	100	2	67	2	67	3	100	0	0	5
Health and Public Service											
Region I	4	57	4	57	3	43	4	57	2	29	14
Region II	3	75	3	75	0	0	4	100	0	0	10
Region III	7	100	6	86	2	29	4	57	2	28	5
Region IV	4	80	4	80	2	40	4	80	0	0	5
Region V	2	66	3	100	3	100	1	33	0	0	5
Home Economics											
Region I	4	44	6	67	3	33	4	44	1	11	12
Region II	3	33	7	78	1	11	7	78	2	22	5
Region III	5	50	8	80	1	10	8	80	1	10	2
Region IV	3	75	4	100	1	25	2	50	0	0	6
Region V	3	75	2	50	2	50	3	75	1	25	4
Industrial Education											
Region I	5	62	4	50	3	37	4	50	2	25	13
Region II	7	87	4	50	1	12	3	37	0	0	6
Region III	6	75	8	100	2	25	5	62	1	12	4
Region IV	3	43	5	71	1	14	5	71	1	14	3
Region V	5	83	4	66	3	50	3	50	0	0	2
Industrial Arts Education											
Region I	4	36	9	82	3	27	8	73	4	36	10
Region II	4	100	3	75	1	25	4	100	1	25	10
Region III	4	44	6	66	2	22	7	78	3	33	3
Region IV	2	50	4	100	3	75	1	25	0	0	6
Region V	3	60	2	40	3	60	2	40	0	0	3
Diversified Education											
Region I	4	67	3	50	2	33	4	66	1	17	15
Region II	1	33	1	33	0	0	3	100	0	0	11
Region III	3	50	5	83	1	17	4	66	1	17	6
Region IV	1	20	2	40	3	80	3	60	0	0	5
Region V	3	60	3	60	3	60	3	60	1	20	3
General Vocational Education											
Region I	4	67	5	83	2	33	7	86	0	0	15
Region II	4	67	5	83	0	0	6	100	0	0	8
Region III	1	33	1	33	0	0	2	67	1	33	9
Region IV	2	40	3	60	2	40	3	60	2	40	5
Region V	1	50	1	50	0	0	1	50	1	50	6
Other											
Region I	3	75	3	75	1	25	3	75	1	25	17
Region II	0	0	1	50	0	0	1	50	1	50	12
Region III	2	100	2	100	0	0	2	100	0	0	10
Region IV	1	50	1	50	1	50	1	50	0	0	8
Region V	1	100	1	100	1	100	1	100	0	0	7

Source - Local District Questionnaire

Table 35

QUALIFICATIONS OF INSERVICE TRAINING PERSONNEL

COMMUNITY COLLEGES 1975-1976

	Experience				Degrees						
	Work		Teaching		BS		MS		Doctorate		No
	No.	%	No.	%	No.	%	No.	%	No.	%	Response
Agri-Business											
Region I	0	0	0	0	0	0	0	0	0	0	8
Region II	0	0	0	0	0	0	0	0	0	0	3
Region III	0	0	0	0	0	0	0	0	0	0	6
Region IV	0	0	0	0	0	0	0	100	0	0	3
Region V	0	0	1	100	0	0	1	100	1	100	3
Business Education											
Region I	1	100	1	100	0	0	2	200	1	100	6
Region II	0	0	0	0	0	0	0	0	0	0	3
Region III	1	100	1	100	1	100	0	0	0	0	5
Region IV	1	50	1	50	0	0	1	100	0	0	3
Region V	1	50	2	100	0	0	2	100	1	50	2
Distributive Education											
Region I	1	50	1	50	0	0	2	100	0	0	6
Region II	0	0	0	0	0	0	0	0	0	0	3
Region III	0	0	0	0	0	0	0	0	0	0	6
Region IV	1	50	1	50	0	0	2	100	0	0	3
Region V	2	67	3	100	0	0	3	100	1	33	1
Health and Public Service											
Region I	1	100	1	100	0	0	0	0	1	100	7
Region II	1	100	0	0	0	0	1	100	0	0	2
Region III	2	200	2	200	0	0	2	200	1	100	4
Region IV	2	67	2	67	0	0	2	67	1	33	2
Region V	2	100	2	100	2	100	1	50	1	50	2
Home Economics											
Region I	1	100	1	100	0	0	1	100	0	0	7
Region II	0	0	0	0	0	0	0	0	0	0	3
Region III	0	0	1	0	0	0	1	100	0	0	5
Region IV	1	33	1	33	1	33	2	67	0	0	3
Region V	0	0	1	100	0	0	1	100	1	100	3
Industrial Education											
Region I	1	50	1	50	0	0	2	100	1	50	6
Region II	2	100	2	100	1	50	0	0	1	50	1
Region III	1	100	0	0	1	100	0	0	0	0	5
Region IV	0	0	0	0	0	0	1	100	0	0	4
Region V	1	50	2	100	0	0	1	50	1	50	2
Industrial Arts Education											
Region I	0	0	0	0	0	0	0	0	0	0	8
Region II	0	0	0	0	0	0	0	0	0	0	3
Region III	0	0	0	0	0	0	0	0	0	0	5
Region IV	0	0	0	0	0	0	0	0	0	0	3
Region V	0	0	0	0	0	0	0	0	0	0	3
Diversified Education											
Region I	0	0	0	0	0	0	0	0	0	0	8
Region II	0	0	0	0	0	0	0	0	0	0	3
Region III	0	0	0	0	0	0	0	0	0	0	6
Region IV	0	0	0	0	0	0	0	0	0	0	5
Region V	0	0	0	0	0	0	0	0	0	0	4
General Vocational Education											
Region I	0	0	0	0	0	0	0	0	0	0	6
Region II	1	100	1	100	1	100	0	0	0	0	2
Region III	0	0	0	0	0	0	0	0	0	0	6
Region IV	1	100	1	100	0	0	0	0	1	100	4
Region V	1	100	2	100	0	0	1	50	0	0	4
Other											
Region I	0	0	0	0	0	0	0	0	0	0	8
Region II	1	100	1	100	1	100	0	0	0	0	2
Region III	1	100	0	0	1	100	0	0	0	0	4
Region IV	1	100	1	100	0	0	0	0	1	100	4
Region V	0	0	0	0	0	0	0	0	0	0	5

Source - Local District Questionnaire

were so sparse that little can be concluded from the data. It is evident, however, that very few of the community colleges provided inservice training for their vocational and technical teaching personnel.

IV. Qualifications of Preservice and Inservice Teacher Educators

University teacher education personnel were asked to supply information regarding the qualifications of those persons who conduct preservice and inservice training. A total of 36 responses were received from teacher educators regarding personnel qualifications. The results are summarized in the following paragraphs.

All respondents indicated responsibility for both preservice and inservice training. Across all program areas 78% of the respondents indicated that the doctoral degree was the highest level of training in their respective fields, while 22% indicated training at the master's level.

The number of years of teaching experience in the public schools were given as follows: (1) 60% of the respondents across all program areas indicated less than five years experience; (2) 22% indicated 6 to 10 years experience in public schools; (3) 8% indicated 11 to 15 years experience; and (4) 8% indicated greater than 15 years experience in public schools.

The number of years of work experience other than teaching were given as follows: (1) 47% of the respondents across all program areas indicated less than 5 years of work experience and (2) 53% indicated more than 5 years.

When asked to give the number of years of university teaching experience in a university setting other than their current position, 56% of the respondents across all program areas indicated less than 5 years and 44% indicated more than 6. In addition, respondents were asked to give the number of years in their present position; 56% indicated less than 5 years and 44% more than 6 years.

Teacher educators were also asked to give the total number of years of teaching experience. Across all program areas 70% of the respondents indicated more than 15 years, while only 30% indicated less than 15.

V. Inservice Enrollments

Undergraduate and graduate inservice enrollments are given in Tables 36 and 37. In addition to the total unduplicated enrollments by teacher education institution, by program area and by year, Tables 36 and 37 present an index to the location of inservice training provided by the state regional universities. Whether the major portion of inservice acitvities are offered on campus is questionable, since many institutions offer inservice activities

Table 36

INSERVICE ENROLLMENTS

UNDERGRADUATE

	FSU	FAMU	FTU	FAU	FIU	UWF	UNF	UF	USF
1975 - 1976 Enrollments									
Agri-Business								25	
Business & Office		1	80			5	10	20	2
Distributive						14	10		6
Diversified						12			
Health & Public Service						12			60
Home Economics					47	3			
Industrial	80	20	200	10	130	175	45		332
Industrial Arts						10			23
Work Experience						10			4
Estimated 1976 - 1977 Enrollments									
Agri-Business								35	
Business & Office		12	90		15	8	30	25	5
Distributive						15	30		
Diversified						14			
Health & Public Service			110		15	14			40
Home Economics					56	25			
Industrial	185	11	400	10	120	175	45		350
Industrial Arts						40			
Work Experience						3			

Source - University Funding Guide

Table 37

INSERVICE ENROLLMENTS

GRADUATE

1975 - 1976 Enrollments

	FSU	FAMU	FTU	FAU	FIU	UWF	UNF	UF	USF
Agri-Business								38	9
Business & Office		29	70	37			10		99
Distributive				15			12	54	64
Diversified				2					33
Health & Public Service				5				6	43
Home Economics	10	6		2	30				11
Industrial	257	10	20	4	16		15	6	140
Industrial Arts	16	30		4					18
Work Experience				2					26
All Service Areas Combined						15			

Estimated 1976 - 1977 Enrollments

Agri-Business								20	10
Business & Office		29	70	37			10		99
Distributive	10			50			15	75	95
Diversified				4					50
Health & Public Service			10	4				10	45
Home Economics	12	30		2	40				10
Industrial	350	10	30	4			30	10	135
Industrial Arts	20	28		4					20
Work Experience				2					75
All Service Areas Combined									18

Source - University Funding Guide

at off-campus locations. For example, FSU may offer inservice education at locations as far away as Cocoa and Jacksonville. It may be observed in Table 37, however, that inservice enrollment is highest in the area of Industrial Education for all nine regional universities, followed by Business and Office Education and Health and Public Service Education.

CONCLUSIONS AND RECOMMENDATIONS

The basic and traditional purpose of vocational education (Evans, 1971) is to prepare individuals to enter the world of work, which is rapidly changing. Vocational education must be responsive to these changes, because occupational trends have direct implication for the future of vocational education. According to Evans (1971), perhaps more important than what will be taught in the future is who will be taught. What will be the composition of the labor force? If the educators and planners are to correct deficiencies in the present vocational education system, they must not only keep up with changes which are occuring, but stay ahead of them. Evans (1971) is emphatic when he states that information which is presently lacking on labor force, technological change, and teacher supply and demand must be systematically collected as a basis for realistic planning.

Management Information System

The Management Information System (MIS) can play an important role in the planning for vocational and technical teacher education in the State of Florida at both the preservice and inservice levels. Much of the data needed for annual and long-range planning was available at the time the study was conducted. Available data should be augmented with additional data from which an annual report of teacher education activities should be produced. This would provide the additional step necessary for planning. The data would be assembled in one location for use by decision makers.

As noted earlier, the researchers presuppose that student enrollment is an accurate indicator of teacher demand. In order for the presupposition to be accurate, the local school districts must base their programs on sound occupational forecasts. Thus it is imperative that the Occupational Information and Delivery System (OIDS) be perfected and implemented. If this system were to provide accurate occupational forecasts by district and if the local districts were to utilize this information in program planning, then the estimate of demand of teachers would reflect occupational needs.

In addition to the occupational information required for local district planning, data should be available to those charged with the annual and long-range planning of

teacher education programs concerning the following topics: (1) Teacher Supply, (2) Teacher Demand, (3) Preservice Education, and (4) Inservice Education.

A discussion of the nature of the data that the researchers feel should be included in a teacher education report concerning these topics follows.

Teacher Supply

The theoretical supply model provides the guidelines needed to develop the data collection requirements for teacher supply. These data requirements are:

	Data Required	Source
1.	Deaths and Retirement	Local Districts and Community Colleges
2.	Geographic mobility out of and into state	Local Districts and Community Colleges
3.	Transfers and Advancements	Local Districts and Community Colleges
4.	Withdrawals from Teaching	Local Districts and Community Colleges
5.	Preservice Teacher Education Productivity	Universities
6.	Occupational and Geographic Mobility (into state or into teaching)	Local Districts and Community Colleges
7.	Re-entrance	Local Districts and Community Colleges
8.	Certification Data	Department of Education

In addition to the data required for theoretical supply, the following yearly indices of supply of

vocational teachers would also be of assistance to educational planners:

Index of Supply	Source of Index
1. New Supply	$\frac{\text{Teacher Education Productivity}}{\text{Unduplicated Teaching Positions}}$
2. Applicants per Vacancy	$\frac{\text{Number of Applicants}}{\text{Number of Vacancies}}$
3. Percentage of Capacity	$\frac{\text{Preservice Productivity}}{\text{Capacity of Preservice Program}}$

The new supply, i.e., preservice teacher education productivity indices, are of particular interest. The results of this study indicated that it would be possible to increase new supply in most occupational areas if the preservice programs were operating at full capacity. In program areas where there was an apparent oversupply, preservice programs were producing above capacity (considering current resources). It is realized that the productivity of programs varies from year-to-year, depending on the flow of students. Thus, the two years reported in the current study may not be predictive of future productivity.

Based on longitudinal data regarding new demand the optimum new supply for each program area should be ascertained. The computation of the optimum new supply should take into account the percentage of the new supply not

available for teaching, as well as the inflow factors other than preservice productivity.

The source of supply utilized by the local school district and community college personnel in filling each vacancy should be obtained on a systematic basis. Such data would establish the degree to which each source is being utilized and thus establish the percentage of the new demand that would be required from preservice productivity.

Teacher Demand

To be practical, the demand for vocational teachers is based on decisions regarding staffing at the local school district and community college level, rather than on labor market trends. Therefore, the pulse of the demand for vocational teachers must be taken at this level. The number of additions, turn-overs, and deletions by program area and by level should be obtained annually. In addition, data from the five-year projection for programmatic change should be gleaned from the comprehensive plans. This would enable the educational planners charged with updating the Master Plan for Vocational Teacher Education to take a forward look as well as a backward look at the needs for instructional personnel. Hopefully, local district plans will be increasingly based on labor market demand. When this occurs, long-range projections of teacher demand would be based indirectly on labor market trends.

Preservice Programs

Much of the data required to assess the preservice programs in vocational education is in regard to productivity (supply) of new teachers. However, it appears that it is necessary to maintain an updated list of preservice programs offered in the nine state universities as well as private institutions. Also, the qualifications of instructors who teach in preservice programs should be established and updated annually. A record should also be kept of the instructional staff who actually teach the preservice course and should be established and updated annually. A record of the instructional staff who actually teach the preservice course should be kept, e.g., a course assigned to a university professor, but taught by a graduate student, should be listed as being taught by the graduate student. This can be accomplished by a course by course report completed each quarter. To compile these data after the fact would be difficult. Recommendations for the content of this report will be included in the section concerning inservice education.

Inservice Education

As noted earlier in this report the inservice education for vocational and technical teachers is provided by a variety of delivery systems. The primary delivery systems are the universities, local districts, community

colleges, and teacher centers. The identification of the activities conducted for vocational and technical education by these organizations was difficult. For example, the comprehensive plans indicated which activities were to be made available to teachers, but no record could be found as to what programs were actually offered and the nature of participant university inservice programs were equally illusive. While some data were collected specifically for this study, and perhaps should be updated annually, it seems reasonable to expect that the nine state universities report each inservice activity that is conducted for vocational and technical teachers. At the time of this study Industrial Education personnel in the Division of Vocational Education were the only personnel who were collecting data regarding inservice education. It was found that these data were being collected without the knowledge of MIS personnel. It is recommended that the type of data collected by the Industrial Education personnel be collected for all service areas. One correction that should be made in the form used (Appendix 3) is that the service area of the participants be identified. The data now being collected by the Industrial Education personnel includes all participants, regardless of service area, e.g., if Business Education students enroll in graduate courses at Florida State University, they are included in the report of Industrial Education.

Finally, it is a concern of the project staff that data regarding the number of participants and the service area they represented was not readily available from the Division of Vocational Education for inservice activities which they funded. Apparently, many of the universities funded for these workshop activities failed to submit final reports on the activities.

General Observations

The data collected in this project indicate that supply and demand of vocational and technical education personnel in Florida are fairly well balanced, and that current productivity of teacher education institutions is not creating an oversupply of teachers. In addition teacher education institutions are not producing at "full capacity." Due to the attractiveness of Florida, in terms of location and lack of extreme weather conditions, a considerable effect on supply and demand results from the migration of teachers into the state.

National Problem

The literature refers to the fact that the problem of identifying supply and demand of manpower is a major disquietude nationwide. Given the magnitude and complexity of the supply and demand problems, a decision to fund a more comprehensive research program, on a continuing basis, over an extended period of time (e.g., a five year time

span) may be well ordered. Such a comprehensive program would have the advantage of eliminating sources of error which cannot be completely excluded on a short-term (one year) contract basis. Also, such a comprehensive program could serve as a model for other states and perhaps serve as a model for a nationwide study. A longer term project could help assure that each respondent supplying data regarding supply and demand interprets and understands each question exactly the same. Additionally, better supply and demand data records would be kept by local district directors as well as teacher educators.

In this study a number of questionnaires were returned in which respondents indicated no knowledge of specific data. In other instances portions of specific questions were left blank. An extended follow-up project would help to eliminate such problems. Whereas the data summarized in this report is a "one-shot" situation, respondents would have prior knowledge about the type of data needed on a longer term project. Also, the researchers could have time to answer specific questions of respondents and educate them regarding the complexity and importance of supply and demand.

Specific Recommendations

The following specific recommendations are made, based on the results and findings of the study:

(1) Support for existing teacher education programs should be increased rather than initiating new programs.

(2) Location of undergraduate preservice vocational and technical education programs should be a minor concern, while the ability of existing institutions to deliver preservice programs should be a major concern.

(3) Existing preservice programs should do a better job of recruiting new students.

(4) Local school district directors, teacher educators, and the Division of Vocational Education should keep better and more complete records of inservice and preservice training and staff development programs. The types of data to be collected and the procedure for collection and storage should be determined by the Division of Vocational Education. Annual review of data to be collected and procedures for colleciton is recommended.

(5) It appears that there are more inservice training activities in sparsely populated areas than in densely populated areas. A review of the location of inservice training activities is advised.

(6) Supply and demand data should be continuously collected by the MIS, Division of Vocational

education. Such data should be stored for easy retrieval for policy making decisions regarding teacher education programs.

(7) Very few technically oriented inservice training programs are currently being offered. It is recommended that a review be made of technically oriented inservice training programs for the purpose of determining teacher needs.

(8) The MIS of the Division of Vocational Education should work closely with the Bureau of Certification and compile a listing of newly certified teachers for vocational education in order to better utilize certification data as an index to supply of vocational education teachers. Such data should be compiled by geographic region and vocational program area.

(9) It is recommended that the Master Plan for Vocational and Technical Teacher Education be updated. In addition, a periodic review (perhaps an annual review) of the Master Plan is advised.

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APPENDIX 1

LOCAL SCHOOL DISTRICT QUESTIONNAIRE

BASELINE DATA PROJECT

COUNTY #_____

SCHOOL #_____

QUESTIONS:

1. Name of person supplying baseline data

_____.

2. Write the number of vocational-technical personnel hired for the first time in your district on a full-time basis in the following years under the areas listed.

3. Anticipated need for new vocational-technical personnel for the following years under the areas listed.

4. Based on experience, list by Administrative or Service Area your 1st, 2nd, 3rd preference source for securing full-time vocational-technical education personnel. (use numbers that correspond to category as listed below)

CATEGORIES

1. Teacher Education Institution
2. Hire away from another Institution
3. Hire away from local Business, Industry
4. Hire away from non-local Business, Industry
5. Part-time placed on full-time
6. Hire away from Technical School or Community College
7. Other (specify)_____

5. Write the category number for each area which best describes the process you would use in searching for applicants when recruiting for vocational-technical personnel.

CATEGORIES

1. Seek recommendation from existing school personnel
2. Seek recommendation by school board members
3. List vacancy with state universities
4. Contact state university Teacher Education personnel
5. Place ads in news media
6. Place ads in professional publications
7. Other (specify)_____

6. When you have an opening for a vocational-technical education position:

a) How many applications do you normally receive for each of the areas listed?

b) How many of these applicants have not previously taught in Florida?

7. Rate the difficulty you have experienced in locating qualified personnel in the various areas. (1=Very Difficult; 2=Difficult; 3=Easy; 4=Very Easy)

AREAS	Administrative	Guidance & Counseling	Instructional: Agri-Business & Natural Resources	Business & Office Education	Distributive Education	Health & Public Service Education	Home Economics (gainful)	Industrial Education	Industrial Arts Education	Diversified	Other (specify)
1974-1975 Additions											
Replacements											
1975-1976 Additions											
Replacements											
1976-1977 Additions											
Replacements											
1980-1981 Additions (Cumulative begin 1977-78)											
Replacements											
First Preference											
Second Preference											
Third Preference											

8. Please check the categories which describe the reasons vacated positions were not filled during the years listed. (check all that apply) ☐ Check box and proceed to question Number 9 if all vacated positions were filled.

	1974-1975	1975-1976
Budgetary shifts		
Lack of Students		
Lack of available qualified teachers		

---

9. Please list below the number of vocational-technical personnel employed as of June 30, 1975.

AREA	FULL-TIME	PART-TIME
Administrative Personnel		
Guidance & Couseling		

---

10. List the number of teachers, supervisors, and administrators hired in your district who have not previously been employed in vocational-technical education for the years indicated below.

EMPLOYED	TEACHERS	SUPERVISORS	ADMINISTRATORS
1974-1975			
1975-1976			

---

11. Inservice Training Personnel (1975-1976)

a) Give the number of personnel conducting Inservice Training programs _____.

b) Inservice training personnel were recruited from: (check all that apply)

___Universities; ___Business and Industry; ___Local School personnel; ___School personnel from other districts; ___Other (specify) _____

c) Of the total number of Inservice Training personnel, check the percentage which were recruited from each category.

CATEGORY	MORE THAN 75%	25% to 75%	LESS THAN 25%	NONE
1. Business & Industry				
a) those with previous work experience				
b) those presently working				
2. Local School Personnel				
3. School Personnel from other districts				
4. Universities				

---

12. Of the Inservice Training activities held during 1975-76, what were the qualifications of the inservice personnel? Please answer by checking all the personnel qualifications that apply for each program area.

AREA	WORK EXPERIENCE	TEACHER EXPERIENCE	DEGREES BS	MS	DOCTORATE
Agri-Business and Natural Resources					
Business & Office Education					
Distributive Education					
Health & Public Service					
Home Economics (gainful)					
Industrial Education					
Industrial Arts Education					
Diversified Education					
General Vocational Education					
Other (specify)_____					

APPENDIX 2

UNIVERSITY TEACHER EDUCATION QUESTIONNAIRE

COLLEGE OR
UNIVERSITY _____

Name of person supplying baseline data:

_____
NAME POSITION

QUESTIONS:

AREAS	Administrative	Guidance & Counseling	Instructional: Agri-Business & Natural Resources	Business & Office Education	Distributive Education	Health & Public Service Education	Home Economics Education	Industrial Education	Industrial Arts Education	Diversified	Other (specify)
1. Please check the vocational areas for which your department (section, program, etc.) provides preservice and/or inservice education. Please check all that apply.											
2. Under the areas that apply to you give:											
a) Number of preservice graduates your institution is capable of producing with your current resources.											
b) How many applicants to preservice programs were turned away due to lack of resources during the following years: 1974-1975											
1975-1976											
3. Give the number of students in your preservice programs who were teaching at the time they were admitted in: 1974-1975											
1975-1976											
4. How many students admitted to your program held the Baccalaureate degree in non-teaching areas at the time of admission? (This question applys to those admitted to obtain certification or certification and advanced degree) 1974-1975											
1975-1976											
5. How many graduates from your preservice programs were not teaching while pursuing degrees during the years listed below: 1974-1975											
1975-1976											
6. Does your program area currently offer preservice programs in Vocational Education which are not listed in the funding guide? Yes No (circle one). If Yes, please check those programs under the proper areas.											
7. Were the graduates in your preservice program areas prepared to teach at a specific level? Yes No (circle one). If yes, please indicate the levels for which they were prepared under the vocational service areas listed: (give number of graduates) Elementary											
Secondary											
1975-1976 Post-Secondary											
Adult											
8. How many teaching vacancies have been listed with you or listed in your placement center for your program areas during the past year?											
9. Please give the number of graduates from your program area who obtained teaching positions in Vocational Education for the years indicated: 1973-1974											
1974-1975											

APPENDIX 3

COURSE INFORMATION FOR

INDUSTRIAL EDUCATION

Vocational Education
Florida State University
Tallahassee, Florida

Course_____ Title_____

Instructor_____

County_____ City _____

Location of Room Used for Class _____

Total Enrollment _____

Number of Undergraduate Students _____

Number of Graduate Students _____

Pre-Service_____ In-Service _____

Number who will hold Temporary Certificates_____

Number who will hold Standard Rank III or above _____

Dates Class in Session - From:_____ to: _____

Note: This report (two copies) should be completed and returned to Vocational Education, Florida State University, 202 South Woodward, Tallahassee, Florida, at the end of the second class meeting.

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